Gleanings in Bee Culture

ESTABLISHED 1873

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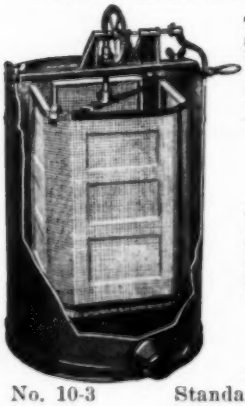

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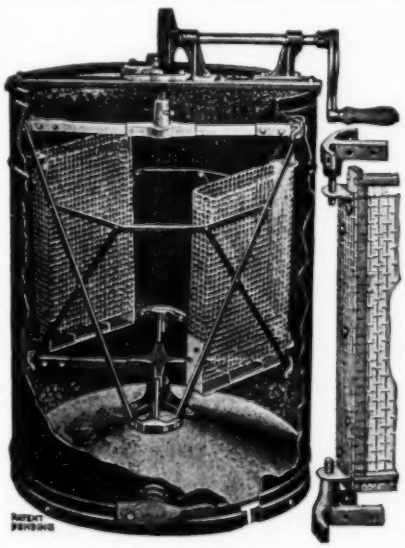

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The Monthly Honey Market

MARKET NEWS SERVICE

U. S. DEPARTMENT OF AGRICULTURE
Bureau of Agricultural Economics

Information from Producing Areas (First half of June).

California Points: Southern California—The weather has been cool and generally clear except for much fogginess near the coast. Colonies are strong and heavy with brood except that some colonies in orange locations shortened brood rearing at the end of the honey flow, and occasional colonies have been weakened by swarming. Extracting of the orange honey is over, with a total yield slightly above that of last year but much below that anticipated earlier. The flow from black sage is a little past its peak; white sage is coming in with a fairly good flow; and purple sage is yielding well in some districts. Approximately 5000 colonies have been moved into Riverside County from Orange, Los Angeles, San Bernardino and Imperial Counties. White sage and buckwheat ranges are being overstocked in some localities. Although in some yards the honey from black sage became tinted with wild mustard honey, darkening the color, white sage is said to be yielding unusually white honey of good body. Bees are working well on buckwheat and tarweed. Honey dew is also being worked actively and unless watched closely this may affect the quality of otherwise good honey. Bees are also working on deerweed and on alfalfa. Extracting of alfalfa honey in the Imperial Valley has not begun but prospects are for a normal crop. Reports differ regarding the amount of inquiry for new crop honey. It appears that few eastern buyers are purchasing at this time, but local buyers are sending out numerous inquiries for local lots and some beekeepers have already sold out. Many producers of orange honey are warehousing their crop and holding for higher prices. Price ranges have been wide, with ton lots quoted at country points, per lb., as follows: Orange, extra white to water white, 5-5¾; white, 4¾-5¾; some, 4½c, and some holding higher; sage, extra white to water white, 5-5¼c; white, 4½-5¼c; extra light amber, 4¼-4½c; light amber, 4-4¼c. Beeswax is quoted at 17-17½c per lb. delivered Los Angeles. Central California—Warm weather has been general and rainfall negligible. The orange flow in the Porterville district was considerably lighter than last year and much of the crop is said to be of rather ordinary quality. The extremely hot weather has cut down the honey flow, but bees are working on sage, buckwheat, spikeweed, lippia, alfalfa, and yerba santa. Many colonies have been moved to mountain locations. The market has been quiet with prices generally steady to slightly lower. Sales by beekeepers in large lots at country points follow: white to water white sage, 4¾-5c; extra light amber to white orange, 4¼-4¾; extra white, 5-5¼c; light amber mixed flowers, 4¼-4½c per lb. The beeswax market has been inactive and prices slightly lower at 16-17c per lb. for good yellow wax delivered San Francisco or Oakland. Northern California—Colony strength varies from weak to extra strong, but though most colonies are weaker than usual from excessive swarming, they are becoming stronger each day. Many colonies have been moved to escape buckeye poisoning, to the cedar at above the 3000-foot elevation and to star thistle locations in the valley. Star thistle plants look well and will begin yielding shortly. Bees are also working on creeping sage, coffee berry, holly, alfalfa, Ladino clover, horehound, bull thistle and various other plants. Supplies of honey are very light but few sales have been reported. Few sales by producers at country points at 4¼-4½c per lb. for light amber mixed flowers; and few 60s water white creeping sage reported sold at 10c per lb.

Pacific Northwest: West of Cascades—The weather has improved during the past two weeks, and has been more favorable for nectar secretion. Recent rains have helped growing plants, some of which had become stunted because of long-continued dry weather, and they are not as dry as previously. Normally strong colonies are doing exceptionally well but many colonies are not up to normal yet. Fireweed has started to bloom and bees are also working on black locust, vetch and berries. Demand for honey is said to be fairly good, with grocers paying 7½c per lb. for light amber mixed flowers in small pails. East of Cascades—In the Yakima Valley bees are building up rapidly on white clover, asparagus, berries and various other plants. Dandelion and fruit bloom is about over. Some colonies reported with 12 to 15 frames of brood. First cutting alfalfa is starting to bloom. Stores are light; little swarming reported. In eastern Washington beekeepers are receiving 6-6¼c per lb. for light amber to white sweet clover and alfalfa. Bees are in good shape and are working on mustard, black locust, elderberry and choke cherry, with alfalfa just starting.

Intermountain States—Stocks of honey remaining unsold are scattered and confined to a few commercial producers, who still have quite a few cars. Most beekeepers, however, are almost completely sold out and have hardly enough to keep local customers supplied. Occasional cars of extra white to water white sweet clover and alfalfa reported at 5¼-5¾c per lb.; 1 car white to extra white sold at 6¼c without cases; white low as 5c; ton lots or more, 5¾c-6¼c per lb.; 60s, 6-7c; small pails, 6-9c per lb. Beeswax reported sold at 16-17½c per lb. Details by states follow: Colorado—Rainfall has continued, decreasing the flow from dandelion and lessening the strength of the bees. Many colonies have starved and others are being fed to keep them alive. From 2000 to 2500 hives reported destroyed by floods in northeastern Colorado, and large areas of sweet clover land have been flooded, retarding blossoms in that area. Alfalfa is starting to bloom and a fairly good late flow is hoped for as a result of the rains, with prospects better than was indicated earlier. Vegetation is backward but many colonies are securing enough nectar to keep them alive.

Arizona.—Catsclaw is blooming quite well, and a light extracting from this source is reported. Some beekeepers are delaying extracting catsclaw honey, thinking that the bees may need it for daily food. The yield from mesquite, however, has been light and little surplus is anticipated. White mesquite will be scarce as many beekeepers, instead of extracting their mesquite honey, have left it in the hives to be mixed with the later alfalfa flow. Small amounts of alfalfa honey are being extracted. The market is gradually strengthening. Sales reported of one car old crop light amber to extra light amber extracted at $5.75 per case of 120 lbs.; other old crop reported held at $5.50 per case, with sales reported of new crop at $4.50-4.75 per case; few low as $4.30.

Summary—Until the close of the period, when the weather was warmer generally, it has continued abnormally cool over the eastern and middlewestern states, but has been much warmer farther west. Bees have been kept in the hives to an exceptional extent by rainy cloudy weath-

er as well as by the cold, but toward the close of the period have been building up actively. Because of the rainfall clover has grown well where it escaped the drouth of previous seasons, and sweet clover plants are more abundant than anticipated earlier. The heavy seeding of new sweet clover plants insures a wealth of sweet clover next year. Heartsease and other fall plants should be abundant following the heavy rainfall this spring, especially along river bottoms. Floods in Colorado, Nebraska and other states have not only greatly damaged and delayed nectar-bearing plants, but have actually washed away several thousand hives of bees. Sweet clover, white clover, locust, raspberries and alfalfa are yielding nectar, and considerable surplus has already been secured, with good prospects if the weather continues favorable. Supplies of honey of the 1934 crop are now extremely light everywhere and new crop honey from the South and from California is appearing on the market. Prices appear lower than they have been, but recently there has been a stronger feeling to the market in Arizona and California. Very little comb honey remains, even in the larger wholesale markets. Exports of honey have been negligible during recent weeks.

Monthly Report of Honey Producers

Early in June we sent the following questions to honey producers: 1. At what price has honey been sold or contracted for, if any, in large lots (carload lots or less) in your locality during the past month for (a) extracted honey, per pound? (b) comb honey, fancy and No. 1, per case? 2. What are prices when sold to grocers in case lots of (a) extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) comb honey, fancy and No. 1, per case? 3. What is the retail price to consumers in your locality of (a) extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) comb honey, fancy and No. 1, per section? 4. How is honey now moving on the market in your locality? Give answer in one word, as slow, fair or rapid. 5. How does the number of colonies that are in condition to store surplus honey this season compare with the number of such colonies last year? Give answer in per cent. 6. What is the condition of the honey plants at this time in your locality as compared with the average? Give answer in per cent. 7. What is the per cent of winter and spring loss of colonies (if any) in your locality? Give answer in percent. 8. What is the present condition of the colonies in your locality as compared with normal? Give answer in per cent. The answers returned are tabultaed as follows:

State. Name.	Large lots. Ex.	Large lots. Comb.	To grocers. Ex.	To grocers. Comb.	To retailers. Ex.	To retailers. Comb.	Move-ment.	No. of colo.	Con. of honey plants.	Loss of colo.	Con. of colo.
Ala. (J. M. Cutts)	..	..	..	..	$.65	..	Fair	100	80	2½	80
Ala. (J. C. Dickman)	..	..	.45	..	.60	..	Fair	100	100	5	100
B. C. (A. W. Finlay)	..	..	..	..	..	..	Fair	100	100	15	100
Calif. (L. L. Andrews)	.05¾	..	..	..	.65	.16	Fair	80	100	38	90
Calif. (F. J. Edwards)	.10	..	..	3.25	.55	.17	Slow	100	120	..	100
Colo. (O. E. Adcock)	..	..	.45	..	.55	..	Fair	50	100	20	70
Conn. (A. Latham)	..	..	.75	4.75	1.00	.27	Fair	140	100	8	100
Conn. (A. W. Yates)	..	..	.70	4.50	1.00	.30	Slow	150	100	10	100
Fla. (H. Hewitt)	..	..	.50	..	.65	..	Fair	90	75	5	100
Ga. (J. J. Wilder)	.07	..	.50	..	.60	..	Fair	100	100	7	100
Idaho. (R. R. Isbell)	.05½	..	.38	..	.45	..	Slow	90	100	10	90
Ill. (A. L. Kildow)	..	..	..	..	.50	..	..	90	10	15	90
Ind. (Jay Smith)	..	..	..	..	.65	.20	Slow	100	75	10	100
Ind. (T. C. Johnson)	..	..	.50	3.60	.60	.20	Fair	90	100	5	95
Ind. (E. S. Miller)	..	..	.47	3.00	.60	.15	Fair	95	90	10	95
Iowa. (E. G. Brown)	..	..	..	..	..	..	..	100	80	15	90
Kans. (J. F. Garner)	..	..	.55	4.00	.65	.20	Fair	90	120	15	100
La. (E. C. Davis)	.06¼	..	.40	..	.60	..	Fair	100	100	5	100
Md. (S. G. Crocker, Jr.)	..	..	.60	3.00	.75	.25	Slow	75	100	25	100
Mich. (I. D. Bartlett)	.06⅛	..	.45	..	.60	..	Fair	90	90	..	85
Mich. (L. S. Griggs)	..	..	.40	..	.50	.15	Fair	100	100	20	90
Mich. (F. Markham)	.07	..	.50	..	.65	..	Slow	100	50	5	100
Mich. (E. D. Townsend)	.07	..	..	..	..	..	Fair	90	75	10	100
Minn. (F. Jager)	..	..	..	..	.58	..	Good	90	85	15	80
Minn. (F. W. Ray)	.06¾	..	.45	..	.55	..	Slow	50	100	20	80
Minn. (B. L. Morehouse)	.07	..	.45	..	.60	..	Fair	75	75	14	80
Nev. (Mrs. E. C. Norton)	..	..	..	..	..	..	..	100	100	2	100
Nev. (G. G. Schweis)	..	..	..	..	.40	.15	Slow	100	105	..	100
N. Y. (Adams & Myers)	..	..	..	..	.60	.20	Fair	100	50	10	100
N. Y. (F. W. Lesser)	.06½	..	..	..	..	..	Fair	100	90	5	100
N. C. (C. S. Baumgarner)	..	..	.70	..	.85	.25	Slow	75	100	25	75
N. C. (W. J. Martin)	.04½	..	.65	..	.85	.20	Fair	90	100	10	100
N. C. (C. L. Sams)	..	..	.45	3.00	.65	.20	Fair	100	90	8	100
N. D. (M. W. Cousineau)	.06½	..	.45	..	.55	..	Slow	90	90	15	90
Ohio. (F. Leininger)	.07¼	..	..	..	..	..	Slow	95	100	5	85
Ohio. (J. F. Moore)	..	..	..	..	..	..	Slow	90	100	7	90
Ohio. (R. D. Hiatt)	..	..	.55	3.50	.70	.23	Fair	110	100	4	85
Okla. (C. F. Stiles)	..	..	.45	..	.65	.18	Fair	90	100	10	90
Pa. (H. Beaver)	..	..	.50	..	.60	..	Slow	100	100	10	100
Pa. (D. C. Gilham)	..	..	.70	3.75	1.00	.25	Slow	100	90	20	100
Pa. (H. B. Kirk)	..	..	.60	3.00	.92	.28	Fair	100	25	5	100
S. C. (E. S. Prevost)	..	..	.75	..	1.00	.20	Slow	75	100	20	85
S. D. (L. A. Syverud)	..	..	.48	..	.60	..	Slow	75	100	22	90
Tenn. (J. M. Buchanan)	..	..	..	..	.75	.20	Slow	100	100	2	100
Texas. (T. A. Bowden)	..	..	.55	..	.65	..	Fair	75	80	25	75
Texas. (J. N. Mayes)	.05	..	..	..	.25	..	Fair	90	90	85	100
Texas. (H. B. Parks)	..	..	..	..	.50	..	..	100	110	3	100
Utah. (R. N. Miller)	.05½	..	.40	..	.50	..	Fair	100	95	8	90
Wash. (W. L. Cox)	..	..	..	..	..	..	Fair	95	100	15	100
Wash. (G. W. B. Saxton)	.06½	..	.42	..	.49	..	Fair	100	100	5	100
W. Va. (W. C. Griffith)	..	..	.60	2.40	.75	.15	Slow	100	100	5	100
Wis. (N. E. France)	..	..	..	..	.45	.12	Slow	100	110	10	90
Wyo. (Earl C. Reed)	..	..	.40	..	.50	..	Fair	90	90	25	90

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E. W. D. MADOC, B. A.

Important Factors Must Be Observed to Be Assured of Success

Perhaps most of us are agreed that requeening is necessary at least every two years and in many cases every year would be better still. Much less unanimity of opinion exists, however, as to the time of year at which this requeening should take place.

There is a lot to be said for requeening with a young laying queen, not less than six weeks before the main flow opens. There is a marked speeding up in the growth of the colony, due to the enhanced morale inspired by the presence of a young queen, apart from her greater egg-laying capacity; but perhaps the greatest advantage of all is the natural check it gives to the desire to swarm.

It has been said that if this requeening is done by allowing the new queen to be raised and mated in the colony to be requeened, that that stock will definitely make no preparations to swarm during the current season, and I think that this assumption may be generally accepted as being correct. At the same time, I do not agree that the fact of the young queen being reared and mated in the hive in which it is to remain is the point of importance, but rather that the combination of a young queen and a temporary cessation of brood-rearing, are the two important factors. When a new queen is reared in a colony, it necessarily follows, except in cases of supersedure or swarming, that there must be a period of some duration, between the death of the old queen and the mating of the new queen, when no egg laying takes place, and it is this temporary disturbance in the regular cycles of brood rearing, with its subsequent alteration of the natural proportion of field bees to nurse bees, which has a definite, although perhaps not fully understood effect on the tendency to swarm.

Introducing Laying Queens

One of the objections to allowing a colony to rear its own queen is the danger that the mating of the queen may be delayed due to bad weather, or she may be lost on a mating flight, in which case the colony is likely to be so much weakened by an unduly prolonged spell of broodlessness that it is unable to build up in time

for the honey flow. For this reason, I prefer to introduce a young laying queen after a period of definitely controlled queenlessness of, say, seven to ten days.

My usual method of introduction is to kill the old queen, and, at the same time, cage the new queen over the frames so that the bees can become acquainted with her and feed her through the wire gauze, but with the candy hole covered so that they can not release her. About a week later queen cells are destroyed. In doing this it is necessary to shake most of the bees from each comb in turn in order to be certain of finding every cell, including those undersized little cells tucked away in a corner which are so often built in cases of emergency. When this has been done, the cover over the candy hole in the queen cage is removed, and the cage replaced over the frames so that the bees will eat through the candy and release the queen.

By this method, the queen is very generally accepted because the bees find themselves hopelessly queenless with no young brood from which they can rear more queens. Furthermore, the time at which the queen is released from the cage is about ten days from the death of the old queen, which is the time when the bees would naturally expect a queen to hatch from the queen cells started as soon as they found themselves queenless.

Actually, it is immaterial whether the new queen is placed in the colony at the time of killing the old queen, or a week later when the queen cells have been destroyed; but if the new queen is to be obtained from a queen breeder, it is better to have the new queen before killing the old one, and thus be sure you do not find yourself with your colony queenless and the queen breeder unable to send the new queen just when you want it. After all, the wretched queen breeder can only rear a certain number of queens at a time and when you write for a queen to be sent by return for certain, he may have sold all he has for the time being, and he can not take them out of cold storage or conjure them out of nothing.

Time for Requeening

It is only really practicable to requeen before the honey flow in those cases where the main flow does not start before the beginning of July, which allows doing the work during May. Queens reared or bought earlier than this are not only difficult to obtain and expensive, but in my experience, they are rarely of such good quality as those reared later, when weather conditions are more desirable.

Queen introduction during the honey flow is satisfactory insofar as conditions for reasonably safe introduction are present, but the fact that the stocks are at their maximum strength and size as regards supers, makes the work at this time unnecessarily arduous, except when it is undertaken as a swarm-control measure.

When the honey-producing colonies persist in building queen cells in spite of the usual precautions, one of the soundest methods of dealing with them is to kill both queen and queen cells and then proceed along the lines indicated previously as being my usual method of queen introduction.

Many people recommend requeening at the end of the honey flow as soon as the supers are off, but I have found this to be one of the least satisfactory times as far as safe introduction is concerned. There is usually a certain amount of robbing going on and the bees are generally rather discontented and hostile to anyone or anything.

Late Fall Requeening

Later on, when the bees have philosophically resigned themselves to the fact that the flow is over and winter is coming; the drones have all been killed and brood rearing has practically ceased—that is the time to requeen with the maximum of safety and the minimum of effort.

The colonies are reduced to their brood-chambers and most of the bees that were engaged in the honey harvest have died off, leaving a moderate-sized stock of young bees in which it is comparatively easy to find the old queen.

When there is little or no young brood and no honey flow, the cover to the candy hole may be removed at once and the whole operation of requeening completed in one visit, with every prospect of the young queen being safely accepted.

Quite contrary to what one might expect, a honey flow or feeding are definitely adverse factors as far as safe introduction is concerned. For one thing, either feeding or a honey flow encourages brood rearing and there will, therefore, probably be some young brood present from which the bees may rear another queen instead of accepting the young queen we wish them to have. The mere presence of young brood is not of very great importance.

Whether there is a honey flow on or not, they will probably start rearing queen cells from any young brood they may have as soon as their old queen is removed. But later on when the young queen has been released from her cage, these queen cells will be destroyed if no honey flow is in evidence. On the other hand, the presence of a honey flow seems to encourage the bees in the view that conditions are quite suitable for them to rear their own queens, and they are, therefore, less amenable to the introduction of a stranger.

There is another and very important advantage attached to this late requeening. A queen introduced so late as this will seldom be called upon to do any serious egg laying until the spring, and for all practical purposes her colony will be on a par with one which has been requeened early in the spring, except that the autumn requeened stock has a queen reared under ideal conditions in late summer and there is no check in spring brood rearing.

As regards swarm control, I am inclined to consider that these two methods are equally good. Theoretically, the gap in the brood rearing sequence which occurs in spring requeening should make this method more certain, but on the other hand these early spring reared queens are on the whole of poorer quality. Supersedure will, therefore, be more common and stocks starting off with the intention of supersedure quite often change their minds and decide to swarm if conditions are suitable.

Tottington, Thetford, Norfolk, England.

[Mr. Madoc's observations on requeening in England are on the whole quite comparable with ours here in the United States. We have found it difficult to introduce laying queens to populous colonies during the early fruit bloom and dandelion honey flow. Later on, as the major honey flow tapers off, requeening is less difficult. When we wish to be reasonably sure of getting a queen introduced we remove the old queen and cage the new queen safely for six days; then remove all queen cells that may be started and permit bees to release the queen by eating candy out of the hole in the cage.—Editor.]

Small Plant for Filtering Honey

H. S. PAINE and R. E. LOTHROP
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[The reader in order to clearly understand the following by Dr. H. S. Payne and Dr. R. E. Lothrop, of the Carbohydrate Division, Bureau of Chemistry and Soils, Washington, D. C., should read the previous article in Gleanings, page 720, of the December issue for 1934. The same article has been reproduced in the 1935 edition of the A B C and X Y Z of Bee Culture. The present article gives some details not given in the former one. In Figs. 1 and 2 we have an apparatus, the purpose of which is to displace the water first mixed with the filter aid and substitute honey for the water. What is filter aid? It is a diatomaceous earth something like a clay that is used to muddy up syrups or honey to be clarified. In order to clarify syrup or honey, it is necessary to add this filter aid in suspension that will later be deposited in a layer to catch and hold the foreign particles. In the same way municipal water plants find that a muddy water will clarify better than a relatively clear one. There must be sediment of some sort to catch and hold the foreign particles to be removed from the water. Some of these are dangerous germs. With this in mind the reader will better understand the function of filter aid. The apparatus shown in Figs. 1 and 2 was not described in detail in the previous article. In the same way other parts of the equipment are illustrated and described more fully in the present article. In the line of tanks it shows that second-hand steel drums for shipping oil or gasoline can be use instead of something made special at the tin shop.—Editor.]

Since the publication of a recent article* describing a rapid method of processing honey by means of filtration, considerable interest has been shown by honey producers, particularly for operation on a small scale. It was deemed advisable, therefore, to describe in greater detail the construction and operation of a small plant capable of processing from 800 to 1000 pounds of honey per day. A plant of this size represents the smallest unit capable of being operated on an economical basis, although the capacity of this plant can be reduced to a smaller scale by utilizing only part of the filtering chambers of the press. Its capacity is ample for the output of several good-sized apiaries, and

*Gleanings in Bee Culture, vol. 62, No. 12, pp. 720-24. (Dec. 1934).

it is suggested that a plant of this size might be operated on a co-operative basis by a number of producers who are interested in packing honey, where conditions are favorable to such a co-operative arrangement.

Arrangement of Equipment†

For a diagrammatic illustration of the arrangement of the various pieces of equipment used in this process, the reader is referred to the previous article dealing with this subject (*).

There are four essential steps involved in carrying out the process, namely: (1) preparation of the filter aid; (2) admixture of filter aid and honey; (3) heating the honey rapidly to processing temperature and (4) filtration. The procedure for carrying out each of these steps, and the equipment required, will be fully described.

Preparation of Filter Aid

In the previous article (*) a brief description of the method of treating the filter aid with water and honey syrup before it is incorporated with the honey was given. Equipment suitable for this purpose, however, was not described. The size of equipment and the procedure described here are based on a capacity of from 800 to 1000 pounds of honey (approximately 75 gallons) over a period of four and one-half to five hours (time of filtration cycle). It is assumed that the reader is familiar with the general procedure described in the previous article. It also should be pointed out that some variations in rates of filtration will occur, due to natural variations in the composition and density of honey. The details of equipment and procedure are based on an average filtration rate of 2.5 to 3 gallons of honey per hour for each square foot of filtering surface. This value was determined by experimentation, and represents the average behavior of honey.

It was found that a high degree of clarity can be obtained for most honeys by use of one-half of one per cent of filter aid based on the weight of honey filtered. On this basis one thousand pounds of honey would require five pounds of filter aid. Furthermore, ½ per cent of filter aid represents the maximum proportion that should be used. In certain cases it might be found satisfactory to use a somewhat smaller proportion. Certain light honeys that contain relatively small amounts of suspended matter can be clarified satisfactorily by use of a smaller proportion (¼ per cent), which has the advantage of reducing the quantity of honey lost in the press cake, and results in faster filtration. In general, however, the clarity of the honey resulting from use of ¼ per cent filter aid is not so good as when ½ per cent is used, but the increased clarity ob-

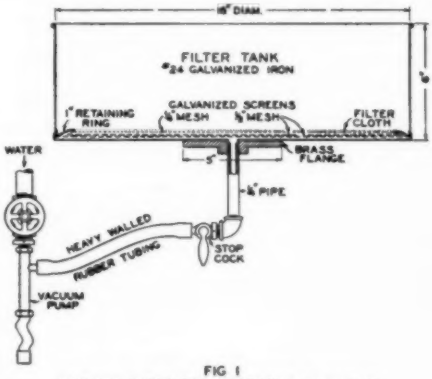


FIG. I
VACUUM FILTER FOR PREPARING FILTER-AID

tained by using ½ per cent may not in some cases justify the small additional costs involved.

The requisite quantity of diatomaceous filter aid (5 pounds) of the proper grade (see previous article) is mixed with about three gallons of water in a five-gallon metal container (this container may be improvised from a five-gallon honey can with the top removed) and brought to a boil and boiled vigorously for one or two minutes. The hot suspension is then poured into the round vacuum filter illustrated in Figures 1 and II and the excess water withdrawn by means of the vacuum water pump. The suction is continued until the water layer on the surface just disappears, when the stop cock (Figure I) is closed to stop the suction. The surface of the cake is then gently tapped with the fingers until a layer of water again separates on the surface, when the suction is applied by opening the stock cock to remove the layer of water.

In order to avoid drawing air into the cake the vacuum should be shut off as soon as the water disappears from the surface. A piece of fine wire screen about five inches square is then placed centrally over the surface of the cake, and a honey syrup consisting of 15 pounds of honey and 3¾

†A list of manufacturers and dealers who can supply the various pieces of equipment required will be furnished on request.

pounds of water (almost two quarts) is poured slowly over the surface. The screen serves to protect the surface while pouring the honey syrup over it. Suction is applied and continued until the syrup is all drawn into the cake, where it replaces the water. In order to avoid drawing air into the cake the suction should be stopped (by closing stop cock) as soon as the layer of syrup disappears into the surface. The cake is then ready for mixing with the honey in the mixing tank. The purpose of adding the honey syrup is to replace the water present in the cake, so that slight dilution of the honey is avoided when the cake is mixed with the honey in the mixing tank.

Fig. 2.—Vacuum filter for preparing filter aid.

If this operation is carried out carefully, there is no loss of honey syrup, since the quantity used is just sufficient to replace the water in the cake. After some experience, preparation of the cake requires only a short time. It is good practice to pour the honey syrup over the cake at about the same rate as it is drawn into the surface. This practice will insure a more even distribution of the syrup throughout the cake, thus resulting in more complete displacement of the water present. Five pounds of filter aid prepared in this manner will form a layer about two inches thick in the filter illustrated in Fig. 1. This filter is of simple construction, and can be made at small cost by any tinsmith. The sides and bottom are made of galvanized iron soldered together. Three layers of galvanized screen are placed in the bottom of the filter and soldered at the edges so that they are held firmly in place. The screens serve to support the filter cloth, and allow a space between the cloth and bottom of the filter for passage of water into the outlet pipe. Figure II shows the flange which is soldered firmly to the sides and bottom of the filter over the outer edges of the screens, and serves to support the edge of the filter cloth. The small water pump can be purchased from dealers in scientific equipment at a cost of from $1.50 to $2.00.

Mixing of the Filter Aid and Honey

For this operation a 90-gallon honey tank connected as shown in sketch (Figure III) will serve both as a mixing and a feed tank. Any one of a number of types of mixing devices can be used for this purpose, but regardless of the type used, it must be designed to rotate slowly, and in operation it must be completely immersed beneath the surface of the honey.

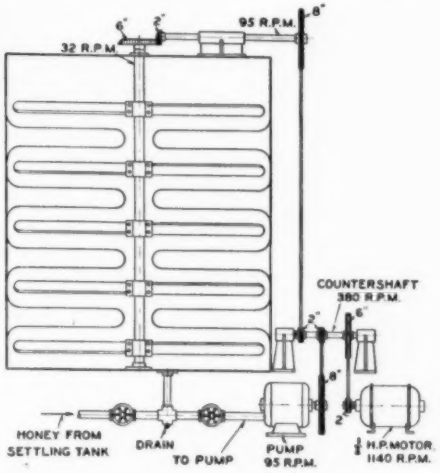


FIG. 3

MIXING APPARATUS

This is done to avoid incorporation of air. The simple paddle mixer illustrated is easily constructed, and relatively inexpensive, although not as efficient as some other types designed for such purposes. It should rotate at a speed of approximately 30 r.p.m. The electric motor for operating the filter press pump can also be used for operating the slow speed mixing device by means of a suitable speed reducing mechanism, since the two operations are not conducted simultaneously. Installation of a counter shaft provided with pulleys of appropriate sizes (shown in Figure III) is perhaps the simplest method of carrying out this arrangement.

The tank should be filled with honey to a level above the top paddle, and the soft cake of prepared filter aid is then placed in the honey and intimately mixed with it by means of the slow speed mixing device. It is important that the filter aid be thoroughly and uniformly mixed with the honey before the filtration operation is started. Although this operation can be carried out with honey at room temperature, the mixing is greatly facilitated if the honey is warmed to about 100° F. A jacketed mixing tank may be used to advantage for this purpose.

Heating the Honey

If the honey is being pumped from the mixing tank into the heater at room temperature (about 75° F.), about 40 feet of

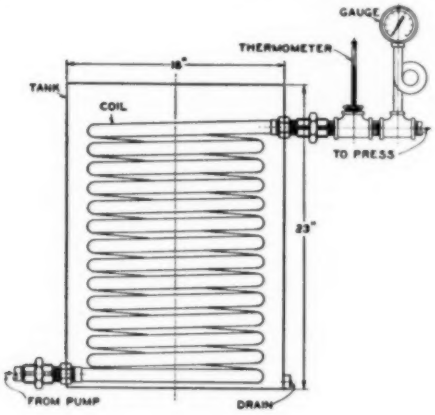


FIG. 4

COIL FOR HEATING HONEY

one inch (outside diameter) tubing made into a coil and placed in a container as illustrated in Figure IV, will be required. This length of coil is ample for heating the honey to full processing temperature (140° to 160° F.) while passing through the coil, provided the water in the tank surrounding the coil is maintained at a temperature approximately 20° F. higher. The correct temperature differential can be determined by trial. The water in the tank surrounding the coil can be heated most conveniently by live steam, provided it is available, since the steam serves both to heat the water and to keep it agitated so as to maintain a uniform water temperature.

If the water is heated by placing a heater under the tank, it would be advisable to keep the water sufficiently stirred to maintain a uniform temperature. A thermometer should be used in regulating the water temperature. There are available on the market a number of types of small water heaters that can be attached to the side of the water bath. If steam or other indirect means of heating the water is used, it might be advantageous to use a wooden container for the coil, since less loss of heat would occur through the sides due to radiation. If a metal container is used it is advisable to cover the sides with some type of insulating material, such as sheet asbestos, in order to reduce the heat loss. The container for the honey heating coil may be improvised from an oil drum or wooden keg.

In mounting the coil it is important to space the turns uniformly, so that no part of the coil slopes downward, but rather a gradual upward slope is maintained throughout its length. Metal straps may be used to insure uniformity in the coil mounting. Although the coil can be made from annealed copper tubing, there is some indication that warm honey attacks copper slightly; hence, an aluminum coil is more suitable for this purpose. At the end of the filtration the water should be drained from the container by means of a plug near the bottom, so that honey adhering to the inner surface of the coil will not be overheated. Any honey remaining in the coil should be drained out at the end of the filtration.

Filtration

In filtrations involving use of a filter aid, such as the filtration of honey, if a constant pressure is used throughout the filtration cycle, the rate is quite rapid at first, but gradually slows down as the filtration proceeds, due to the steady increase in thickness of cake that collects on the cloths in the filter press, through which the honey must pass. It is better practice in filtrations of this kind to allow the pressure to control the rate of flow, so that the rate is approximately constant throughout the filtration cycle. Under these conditions the pressure is low at the beginning, and is gradually increased as the filtration proceeds. It is good practice to adjust the rate of flow so that at the beginning the pressure is below five pounds per square inch of filter surface and to carry out the first stage of the filtration at comparatively low pressures.

It has been determined experimentally that at 140° F. most light-colored honeys filter at an average rate of about three

gallons per hour for each square foot of filtering surface under pressures that range about 5 pounds per square inch at the beginning to 50 to 55 pounds at the end of the filtration cycle of 4½ to 5 hours. The filtration rate, of course, is subject to some variation, depending on the type of honey filtered. If, on this basis, the pump displacement and speed are so chosen as to produce a steady flow of filtered honey somewhat below this value (say 2½ gallons per hour for each square foot of filtering surface), filtration at fairly low initial pressures will usually be assured. For a filter press of appropriate size (for instance, a 7-inch, 12-chamber aluminum press with 1-inch frames which contains 6 square feet of filtering surface), the requisite flow would be 15 gallons per hour or 75 gallons for a 5-hour period. Assuming the rotary pump used has a displacement of 0.0025 gallon per revolution, at a speed of 100 r.p.m., it would deliver one-fourth gallon per minute, or 15 gallons per hour, which is the flow required for the press described above.

In this connection, it is well to stress again the importance of starting the filtration with low pressures. If the initial filtration pressure is high, it will cause a tight packing of the filter cake at the beginning, and this will greatly reduce the subsequent rate or flow of honey through the press. The working parts of the rotary filter press pump should be made of specially hardened steel in order that it will resist the abrasive action of the filter aid. Upon entering the filter from the heating coil, the honey must not be allowed to cool, since any cooling of the honey at this point greatly retards the speed of filtration. The press must, therefore, be warmed before the filtration is started, and its temperature must be maintained throughout the filtration. Specially constructed filter presses are made in which warm water is circulated through jacketed plates for the purpose of temperature control.

However, a much simpler arrangement for this purpose can be used, which consists of covering the press with a wooden box as shown in Fig. V. The air inside of the box surrounding the press is kept warm by means of a small heater. Four electric light bulbs, placed so that two are on each side of the press inside of the cover, may be used satisfactorily for this purpose. A thermometer should be used to check the temperature inside of the box. This temperature should be kept about the same as that of the honey as it enters the press. It is well to start heating the press some time before the filtration is started in order to insure that all parts of the press are brought to the desired temperature. It should be kept in mind that the honey is not heated in the press; the arrangement above merely provides a means of maintaining the temperature during filtration.

The cloths used to cover the plates of the filter press should be preshrunk and

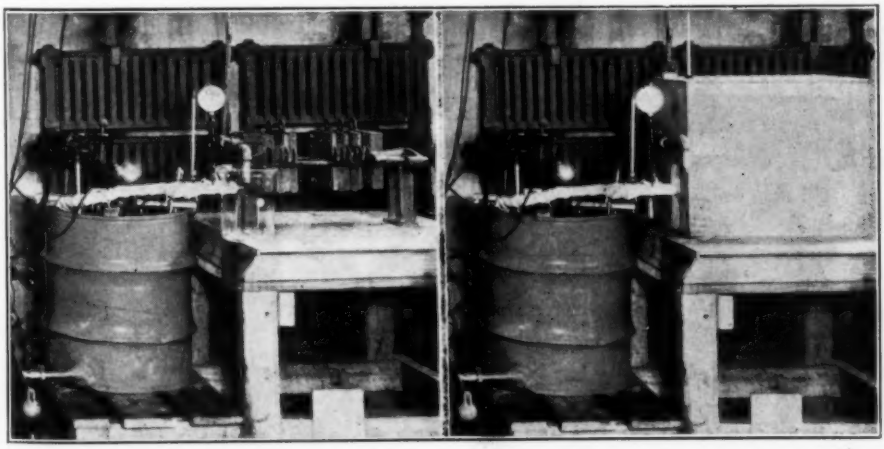


Fig. 5.—(A) and (B). Method of maintaining temperature of press. (A) Press uncovered. (B) Wooden box cover in place. Three 100-watt electric lights used to maintain temperature inside of cover. (Wall radiators in background are not a part of the equipment.)

cut to fit the press. They may be purchased from manufacturers of filter press equipment. A light cloth should be used. At the end of the filtration the frames of the press will be almost completely filled with cake. The cake is easily removed by peeling from the cloths. After the cake is removed the cloths are ready to use again. A definite amount of honey will be retained in the cake. While this may be considered a loss, it is possible to recover at least a portion of this honey. More than one-half of the honey, for example, can be squeezed from the cake by means of a hydraulic press. It is not recommended that this method be used for recovery of honey from the filter cake, since the cost of a hydraulic press for this purpose would probably not be justified. If the accumulated filter cakes from several filtrations be intimately mixed with an equal weight of water in the mixing tank, a large portion of the honey in the cakes may be recovered in the form of a syrup. Other ways might possibly be found for utilizing the honey in the press cake.

The scheme for construction and operation of a small honey-filtration plant outlined above assumes that electricity for operating the honey pump motor, and water pressure for operating the water vacuum pump, are available. When these facilities are not available, certain changes will be necessary. For example, a stationary gasoline engine could be used to supply all the power required to operate the pump and mixer, and a small mechanical vacuum pump used in place of the water vacuum pump. In the case of those already engaged in producing and packing honey, it is assumed that a considerable part of the equipment required for the process would be available, or could be improvised. In all probability, it would be necessary to purchase the filter press, say at a cost of about $95.00, f. o. b. factory (the 7-inch press described above), and a suitable rotary filter press pump at a cost of about $35.00 (without motor or mountings). The cost of the vacuum filter for preparing the filter aid (Figure 1) will be about $10.00, which includes cost of material, labor, and the water pump. In order to suit local conditions, some variations in equipment and procedure from that described here might possibly be utilized to advantage.

Incorporation of Air

A consideration of primary importance in filtering honey is the necessity of avoiding the introduction of air into the honey at various steps of the process. Although it is found that small quantities of finely divided air can be removed from honey by this method of filtration, on the other hand, if any appreciable quantity of air is incorporated with the honey, it will be

Fig. 6.—Effect of filtration on subsequent granulation of honey.

broken up into small bubbles in passing through the filter. The presence of this finely divided air imparts a cloudy appearance to the filtered honey, and upon separation it may produce a slight surface foam on the bottled honey. By taking the necessary precautions at each step where it is likely to be introduced, the problem of air incorporation can be largely overcome.

Air will most likely be introduced in the following ways: (1) In preparation of the filter aid before it is incorporated with the honey. This is avoided by taking care not to draw air into the cake while removing excess water by means of the suction pump. (2) The presence of grossly suspended air in the honey before admixture of filter aid. This is prevented by allowing the honey to stand for some time in a settling tank, so that most of the air rises to the surface. The honey is then drawn off from beneath. (3) Air incorporated when mixing honey with filter aid. This is prevented by use of a slow-speed mixer, and by filling the mixing tank to a level above the moving parts of the mixer. (4) Air pockets trapped in coil or piping. This is prevented by having a gradual and uniform upward slope in the coil and piping between the pump and press. Air will then be displaced upward by the honey upon entering the system. Tanks should be piped so that the honey is drawn off from the bottom. The rotary honey pump will not incorporate air, provided the honey is relatively free from air upon entering the pump.

Granulation

It is not contended that any type of honey processed by quick heating and filtration as described above will remain free of crystallization indefinitely, since the number of observations that have been made in this respect on various types of honey are too limited to justify any definite conclusions. However, some observations relative to this point have been made and can be discussed at this time. Figure VI markedly illustrates the effect of filtration on subsequent granulation of samples of clover honey approximately ten months after bottling. The processed samples were filtered in June, 1934, by the method described here, a filtration temperature of 140° F. being used. The original sample (not filtered) was thoroughly liquefied at the time by the usual method of heating. These samples were displayed at the World's Fair in Chicago during the summer of 1934, all samples being entirely liquid and free of visible crystals at the time they were displayed. When the samples were finally returned (about April 1, 1935) they were in the condition shown, the sample of original (not filtered) honey having granulated to a solid state, whereas the filtered honey showed no indications of granulation.

In view of the comparatively low processing temperature used (140° F.) and short duration of the heating period (15 minutes), these results tend to bear out the view that filtration treatment effectively removes small crystal nuclei, the presence of which in honey serves to start subsequent granulation. It would appear, therefore, that granulation of honey can be effectively controlled by means of a considerably less drastic heat treatment when accompanied by filtration than is required by usual methods of heat treatment.

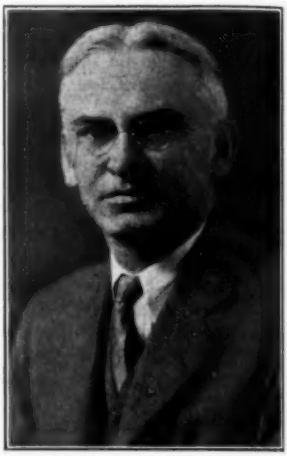
Washington, D. C.

[The reader should be cautioned against carrying filtration too far. It is stated in the previous article that if the work is done right there will be no loss of flavor or of the minerals or other essential food elements in honey. There are some who have been carrying filtration so far that the honey, although wonderfully sparkling and clear, is nothing more than a tasteless, flavorless invert sugar syrup. It is doubtful if such honey would meet the U. S. standards for a pure honey. We somewhat question whether it is wise to filter light honey having a mild flavor. The danger is that some of the aroma might be removed by the process. One large bottler stated that some of his customers were suspicious or afraid of the beautiful, sparkling honey because they said it did not look like honey. Most good honeys, when held before a bright light, show a slight cloudiness, due to small air bubbles held in suspension. The consuming public is accustomed to seeing this and expects it. We do not, of course, share the view that cloudiness in honey is an evidence of purity. One large bottler told us that he clarified honey because it was so beautifully clear that it was selected in preference to an equally good flavored honey at the same price. The beekeepers of the country owe a debt of gratitude to the Carbohydrate Division of the Bureau of Chemistry and Soils for what it has done and we hope will continue to do in showing means by which the appearance of a honey can be improved. It will be a help in clearing up a light honey that is too cloudy in appearance to sell well.—Editor.]

A Bee-Minded Professor

H. B. PARKS

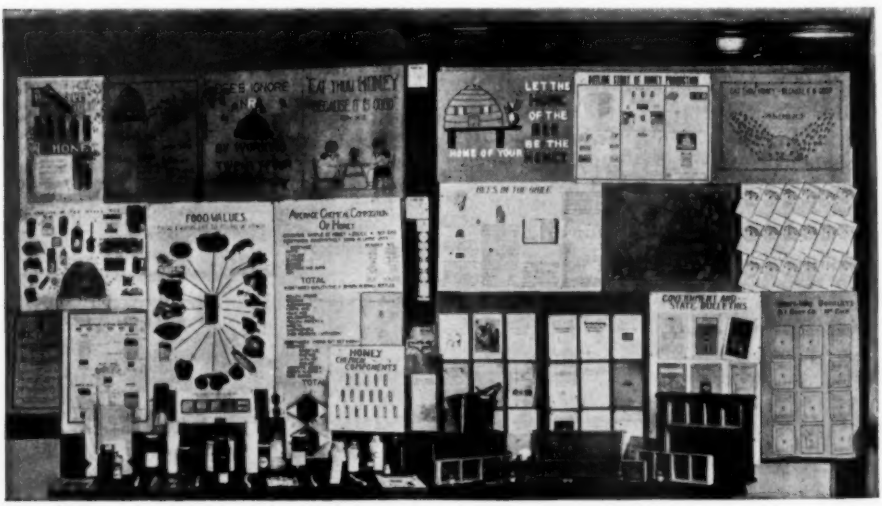
Dr. Baird's Recitation Room Is the Most Popular Place on the Campus



Dr. Don O. Baird.

Following the precedent set by that famous beekeeper-poet of centuries ago, I write of bees and the man who, after long search for an animate being which could be used in the classroom to illustrate not only the activity of the lower forms of life but also could be used in the teaching of co-operation, cleanliness, industry, and perseverance, chose the honeybee. I speak of Dr. Don O. Baird, Professor of Biology, Sam Houston Teachers' College at Huntsville, Texas. He came to the college after an abundant preparation in the universities of the East and a teaching experience in noted schools. He found here an opportunity to build up a teaching unit that would not only fix certain well-known principles in the minds of the student teachers but would cause them to see and understand that all nature is akin and that to be able to teach others they themselves should be able to learn.

From laboratory experience Dr. Baird knew of the possibilities of the use of the honeybee to illustrate the facts which he wished to impress upon his students. Four years ago he began to use a small observation hive in classroom work. Today, at the right of Professor Baird's desk, stands the beautiful four-frame observation hive connected with the window by a glass and timber tunnel, as is so well shown in the picture. Doctor Baird believes in entire co-operation. The observation hive and its fixtures was manufactured by the Manual Training Department of the school. The poster and illustrations which are shown in the pictures are the product of the English and the Art Departments.



The posters and illustrations decorating one side wall in Dr. Baird's classroom.

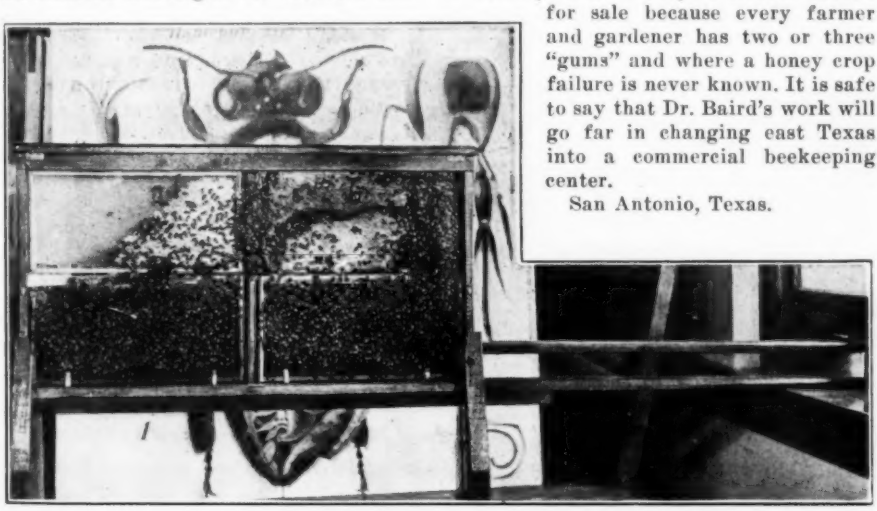
The result of this co-operation is that the Teachers' College is bee-minded. The Doctor's recitation room is the most popular place on the campus. The colony of bees which live on the four brood frames have, at this writing, December, 1934, been in the hive since June, 1934. Since that time they have drawn four frames of comb. They have stored at least three complete frames of honey and the Doctor could tell you just how many young bees have come into existence within that hive. He reports that the queen is not bashful and that thousands have seen her deposit her eggs and seemingly enjoy the publicity.

Dr. Baird, besides teaching beekeeping to various classes, whenever the opportunity arose, has given a number of lectures to clubs and other organizations. He has found time to present papers before the Houston meeting of the Southern Beekeeping Conference, the Texas Academy of Science, the Texas Folk-Lore Society, and the Texas Beekeepers' Association.

The two exhibits made up of posters, charts, and beekeeping materials, together with the large observation hive formed the special feature of the Texas Beekeepers' Association meeting in August of 1934 at College Station. This exhibit attracted a large attendance and received much publicity.

Dr. Baird believes that the way to advance any movement is to convince those who are to be the leaders, of the necessity, the advantage, and the reward which comes from bringing into existence a habit or activity of a people. To this end Dr. Baird is impressing upon those who in a few years will be the teachers of East Texas the value of the honeybee in a locality where honey is seldom offered for sale because every farmer and gardener has two or three "gums" and where a honey crop failure is never known. It is safe to say that Dr. Baird's work will go far in changing east Texas into a commercial beekeeping center.

San Antonio, Texas.



The observation hive in the college classroom with entrance out of doors. Notice the enlarged pictures in the background, showing the anatomy of the bee.

Unusual Uses for Wax and Honey

BEN. NIELSEN

Let's Be Sure We're Not Overlooking Uses for Our Products

It was quite by accident that I discovered a splendid use for beeswax. For a number of years my workshop, weather permitting, had been Nature's great out-of-doors. Then we moved to a place having a big basement with a cement floor. A part of this space I equipped and arranged purposely for my workshop. Here, too, wax was rendered, combs scraped, etc. Before long I happened to notice that my work shoes were wearing uncommonly

long and well. Not that I resented this fact, but I could not help wondering just why they did not need resoling as frequently and soon as they used to need it. I had purchased the same brand as usual and at the same price. Upon close examination I found the soles to be completely and smoothly covered with a good coat of beeswax! Examination of the floor in the basement work shop revealed a generous coating of beeswax, too, and from this source my shoes had become liberally coated and protected from wear. Thus the mystery was solved.

Beeswax Lengthens Life of Shoes

If this worked so well on my shoes, prolonging their wear, it certainly ought to be a good thing to use the wax on the shoes of lively little honey-fed children. I tried this method and it surely adds months of wear to shoe leather.

The wax should be melted and applied with a broad knife or spatula. Or a hot

Applying beeswax to the sole of a shoe.

spatula works very well when rubbed on the wax and applied quickly before the wax can harden. We also use the wax on the scuffed toes and other portions of the shoes which receive hard wear. After the wax application, polish is applied in the usual way.

Photographers and those who develop and print kodak films use beeswax, too, though they may use it unknowingly. The solution which is put on the ferrotyping plates contains beeswax and gives the pictures their high glossy finish. If one buys this solution made up he pays about thirty-five cents for four ounces. One may make it for almost nothing. The formula is as follows: Benzole, 4 ounces, and yellow beeswax, 40 grains. Combine, decant, and use clear portion only. If too thick or gummy, thin out by adding more benzole. Apply a small quantity of the lubricant to the plates with a tuft of cotton and polish them with canton flannel.

The small gadgets women buy in the stores for use in keeping their irons clean and smooth in ironing can be made very easily and inexpensively at home. Use egg shells for molds. Into each half of an egg shell pour clean, melted beeswax. Allow to cool partially, but before wax sets insert a small wooden knob or handle. When the wax has become hard remove egg shell and wrap the wax portion in clean cloth; tie material around handle neatly and securely with string or wire.

We sell beeswax to carpenters who are laying hardwood floors. Each nail is first driven into the beeswax and then into the wood.

Beeswax for Cuts and Sores

Recently we sold beeswax to be made into salve for burns, cuts, and sores. We learned that some staunch users of this particular salve think there is no other its equal. To make it, use: Two cups lard, one cup mutton tallow, one cup beef suet, six ounces of beeswax, four ounces of resin, two ounces balsam fir. Carefully try out the suet and tallow, crush the resin, melt suet, tallow, and beeswax, stirring constantly. Put in the resin, and stir until dissolved. Then stir constantly until mixture comes almost to a boil. Take from fire and pour in balsam fir, then stir until cold. The stirring thickens the salve. Store in tight containers.

Honey Enhances Beauty of Stones

Popular Mechanics magazine tells of a most unusual use for honey. Gems are boiled in honey to enhance their beauty. Semi-precious stones in particular are subjected to various degrees of heat to enhance their color and sparkle. Agates, for instance, when boiled in honey will absorb the substance. Then when heated, the honey in the pores of the agate is carbonized and black or brown veins and spots are produced, making the stone more beautiful. The deep yellow topaz is greatly increased in value by the change to a delicate rose pink. Zircon is second only to the diamond in brilliancy and fire when its color is removed by heating. They are often used, after this treatment to incrust watch cases.

Aurora, Nebraska.

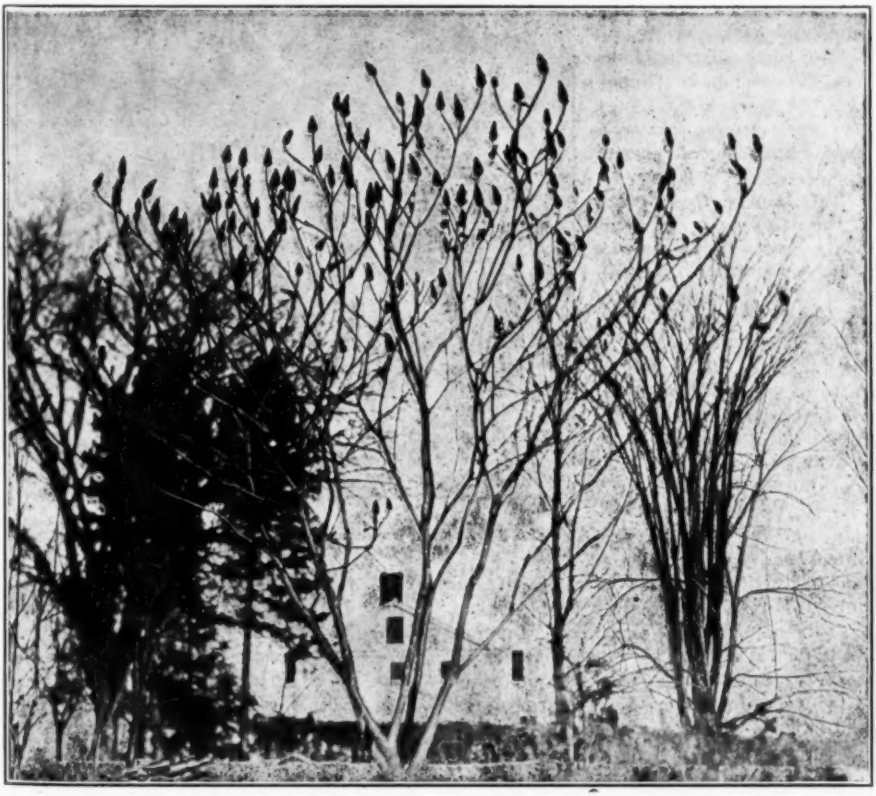
Poisonous Honey Plants

JOHN H. LOVELL

The Foliage of These Plants May Be Poisonous to Certain People, But the Honey from the Blossoms Apparently Carries No Poison

There has recently come to my attention a communication in which it is stated that immunity from poisoning by poison ivy may be secured by eating one or more leaves of this plant. We can not too strongly condemn such advice, which in the case of many persons would lead to serious illness or even death. Different persons, even in the same family, differ very widely in their immunity from ivy poisoning. A boy in this town could handle the leaves, or put them in his mouth without any noticeable effects. But some years ago my little sister put one or more of the shining leaves in her mouth which resulted in a long and severe illness. A college student whom I know could not go near the plants without being poisoned by a volatile vapor or gas given off by the foliage. I do not believe that there is any treatment possible which will give immunity to a person liable to the influence of this poison.

Dr. Bigelow says in his Medical Botany that he himself was not affected by handling and chewing the leaves *of Rhus radicans*, poison ivy. But he adds: "I have nevertheless been told of cases in which death appeared to be the consequence of this poison." He gives a number of cases in



Staghorn sumac, Rhus typhina. (According to some botanists Rhus hirta. A tree in winter showing the terminal crimson clusters of fruit.

which *Rhus radicans* had been administered internally with doubtful results. He concludes: "My own opinion is, that the plant under consideration is too uncertain and hazardous to be employed in medicine, or kept in apothecaries' shops. It is true, that not more than one person in ten is probably susceptible to poison from it. Yet, even this chance, small as it is, should deter us from employing it. But since it is neither certain in effects, nor manageable in its extent, the prospect of benefit is not sufficient to justify the risk of a great evil."

Poison Oak

According to Prof. Jepson, in his Flora of Western Middle California, *Rhus diversiloba*, poison oak, is widely distributed and abundant in the Coast Ranges and foothills of the Sierra Nevada. The foliage is highly poisonous, though mules and horses browse on it. "In some districts," he says, "bees make honey from the flowers, the honey is of good grade, sold on a commercial scale and carries no poison."

Prof. George A. Coleman of the University of California writes of poison oak (*Rhus diversiloba*), as follows: "The foliage is highly poisonous to some persons, while others appear to be immune to it. The honey is white to amber, of good flavor and non-poisonous. Always a good source of early feed and some years a considerable surplus is stored."

G. H. Vansell in his bulletin on the Nectar and Pollen Plants of California, reports that "poison oak is an important source of excellent honey." Richter says of this plant: "Everywhere common throughout California. Some localities in Monterey County report a superior grade of white thin honey which granulates readily."

I have dwelt at some length on the honey gathered in California from poison ivy or poison oak because it is so abundant and well known, and the evidence is so conclusive. But H. R. Green, of Melrose, Oregon, reports that poison oak is very plentiful in his locality, growing everywhere on vacant land, roadsides and hillsides. "One of the most reliable honey plants we have. The honey is light in color, mild and good."

Poison ivy *(Rhus radicans)* is a woody vine climbing by rootlets, but often a low shrub. Poison dogwood *(R. Vernix)* is a swamp shrub, sometimes becoming a small tree. Both these shrubs are widely distributed throughout the eastern states, though nowhere very abundant, and yield more or less nectar; but I can find no reports of a surplus honey obtained from them in this region. If the honey, when gathered, contains any deleterious properties, it probably disappears quickly as it ripens. If even occasional poisoning occurred, it would probably be known.

Poison dogwood, a swamp shrub. Rhus vernix. Flowers, fruit and leaf. (After Emerson.)

Waldoboro, Maine.

From the Field of Experience

WHEN THE COFFEE BLOSSOMS

In Jamaica the Air Is Sweet Scented and Supers Are Quickly Filled

About the first of March the rich green of the tropical vegetation was broken only here and there by greenish-yellow clusters of early flowering mango, or by the more pronounced yellows of the avocado pear. A fortnight passed, and the

Coffee bloom in Jamaica.

roadside ditches were littered with the fallen pink blossoms of Otaheiti apple trees, which heralded in the new season for the honeybees. Two days ago, March 20, the fields were clothed in a robe of snowy white and the air was heavy with the sweet scent of coffee blossoms.

In the apiary there were unmistakable signs of activity, and I had to substitute starters for frames of sealed brood and brace combs in the breeder queen's half-strength colony. Colonies with shallow food-chambers were agitating for additional storage space, while some of the more advanced colonies showed signs of overflowing the second shallow super. Several colonies have superseded their last year's queens and are settling down to work with a will. A few colonies which elected to reject the new queens I gave them have substituted others more to their liking. On the way to the apiary, I met an old beekeeper acquaintance. He said that he would be extracting shortly.—A. L. Bartlett, Jamaica, B. W. I., March 22.

EGGS SURVIVE EXPOSURE

In Spite of Abnormal Conditions and Environment Brood Developed

Late last summer I had an experience that I hesitate to tell for fear of not being believed. I have checked over all the facts, however, and am certain that I made no mistake.

I had been placing filled supers above escapes about the middle of August. As the weather was fairly hot, most of the hives had their supers staggered to provide ventilation. In several hives, upper stories were also being used in queen rearing, preparatory to trying automatic requeening.

In one hive, in which, however, I had placed neither queen cell nor brood, and which, incidentally, had supers composed entirely of white combs built from foundation that season, I found a young queen just beginning to lay. I concluded that she must have strayed in from another hive. Finding she had laid but 90 or 100 eggs, I removed her. The super was entirely filled, except two or three small patches of empty cells left for the queen. I shook the bees off the combs and took the super home among those intended to extract.

Now comes the curious part. After being extracted, these supers were replaced on the hives two days later. No notice was taken of their origin, and this particular super, the only one containing white combs entirely, was placed on a different hive. The supers on this hive were not staggered as robbing had begun to be noticeable.

Two weeks later, cool weather having

suddenly stopped the honey flow, I commenced removing all supers. Some were partly filled and some almost empty. The hive I had placed this super on (although, of course, I did not remember it as such at the time)) had the hive body on top practically empty of honey, but had a small cluster of bees to one side. As I shook them off I was much surprised to see two frames, each containing perhaps 20 to 30 cells of sealed brood.

I looked through all the remaining supers and found no other brood of any age. The queen excluder was in place, making it impossible for the queen below (which was of ordinary size) to have gone above and returned below again. I could find no sign of any queen above; and upon remembering that this super was the one the young queen already mentioned had begun laying in, I was forced to the conclusion that this brood was a result of her eggs.

Now, these frames had gone through a small hand extractor, being perhaps whirled fairly fast for three or four minutes. The supers then stood in the extracting room two days. It may seem hardly possible, yet I am sure from my observations that a part of these eggs did hatch and develop. All the cells were worker brood, and as I purposely left the frames on the hive, all emerged.

This causes me to wonder just how much is known of the vitality of eggs. Did they in this case have more because of coming from a queen just beginning to lay? The nights, while not cold, were around 55 to 65 degrees. One would think that centrifugal force alone would have killed them during extracting, even if it did not throw them from the cells. Perhaps others may have had similar experience, but to me it seemed remarkable that these eggs could survive and produce adult bees. Is it not possible that nature puts an enormous vitality in the egg to withstand abnormal conditions?—C. M. Isaacson, Middle River, Minnesota.

REMOVING AIR FROM HONEY

A Simple Method of Getting Air Bubbles Out of Honey Packed in Glass

If you want to dress up extracted honey and show it to full advantage, it should, of course, be packed in glass. When honey is packed in glass, all of its qualities are shown, good and bad. Any sediment, cloudiness, or granulation is exposed to the critical eye of the prospective purchaser and an imperfect pack may mean the loss of a sale.

We have marketed considerable honey in glass, and the demand is getting stronger each year. This increased demand is due, in part, at least, to the fact that we pack a quality product. All honey is treated to retard granulation and filtered through a fine mesh cloth. Every ounce of honey packed in glass should be carefully filtered, so that all debris is removed. This is extremely important and is the first step to take when packing honey in glass. After the filtering process, air bubbles are usually found throughout the honey, and it is very desirable to remove them as rapidly as possible without further heating. This can be accomplished by the following simple and inexpensive method:

The jars are placed in the shipping cases immediately after filling. A ¾-inch board about the size of the bottom of the case is then tied securely to the case. Several cases are prepared in this way, and, while the honey is still warm, are placed in the extractor with the board on the outside. The jars will thus be lying horizontally with the lids toward the center of the extractor. The cases are properly balanced and revolved at high speed. The speed and the length of time required depend upon the temperature and weight of the honey.

This process removes air bubbles and aids in clearing the honey. This not only makes a better looking product, but the removal of air bubbles also retards granulation.—C. H. Gilbert, Laramie, Wyo.

HONEY CHOCOLATE CUP CAKES

When Put on Display in Glass Covered Dishes They Sold Themselves

There's something just a wee bit different about the finished product when the cake batter or dough is baked in tiny gem or muffin tins, as tea or cup cakes. And when flavored and kept moist and fresh by its honey content and topped with honey icing, it's more than a wee bit different!

For these cup cakes you will need: Two eggs, 1 cup sugar, 1 cup sour cream, 3 tablespoons cocoa, 1 teaspoon soda, ¼ tea-

spoon salt, 2 tablespoons honey and 1½ cups of flour.

Beat the eggs until very light and fluffy. Add sugar gradually, beating hard. Add honey. Sift flour before measuring, then resift with the dry ingredients and add alternately with the sour cream. Mix thoroughly. Fill well greased muffin or gem tins about two-thirds full. Or drop batter into the handy paper baking cups to be secured at the five and ten cent stores or at confectioners' stores. No greasing is necessary with these. They help, too, to keep baked goods fresh. The cups may be placed in the muffin tins or well apart in pie tins, or on lids or cookie sheets. Bake 20 to 25 minutes in a moderate oven of 375° F.

Give each cake a generous coating of this delicious honey icing: In the top part of a double boiler place the whites of two

Spreading the honey icing on the honey chocolate cup cakes.

eggs, unbeaten, 1 cup sugar, 3 tablespoons of water, and 1 tablespoon of honey.

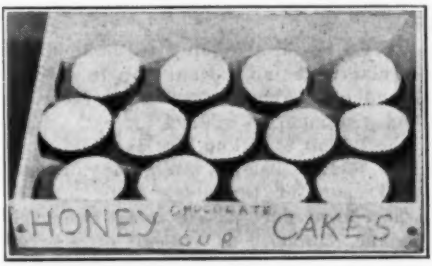
Place over rapidly boiling water and cook for seven minutes, beating constantly with a rotary or an electric beater. A teaspoon of vanilla may be stirred into the mixture after removing it from the stove but we like the delightful and different flavor the honey imparts.

This icing thickens slightly upon cooling. If directions are carefully followed, it never fails to be glistening and creamy. Upon cooling it forms a smooth, satiny coating of just the proper hardness while the interior remains always smooth, soft, and creamy. The cups are removed just before serving.

Several years ago we introduced these cup cakes in grocery stores and eating houses, such as cafes and hamburger establishments. Though they did look tempting and upon tasting them proprietors pronounced them delicious, they were a little doubtful as to their reception (filling qualities, too, for they certainly are feather-like) in competition with the traditional doughnuts so much in demand. Women were certain to like them but in such places most of their customers are men. So we left them on consignment. This was not necessary a second time, for they met with instant and continued approval.

Though we had emphasized the fact that these little cakes would remain fresh and moist, the icing creamy without cracking because honey had been used in the making, proprietors seemed skeptical. But the goods soon proved our statement and the proprietors actually seemed to think they had discovered these qualities themselves, the way they told us about them in surprise. Men eating there, inquired as to their source and we supplied special orders in addition to our regular ones. To the women who wanted the recipes, we gave them gladly. Some of them had never used honey before and it proved an opening wedge for further use of honey. For women are very glad to secure a recipe for an icing such as this—easy, inexpensive to make and one that is everything women demand of an icing!

Though the eating houses were equipped with bin-like glasses such as doughnuts are kept in and plenty of room was



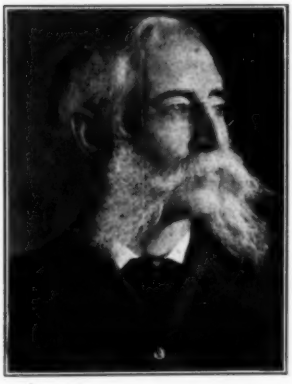
A glass covered case keeps the cakes in attractive display.

available on shelves lined with pies, we thought our product would be kept nicer and would demand more attention if placed separately. So we supplied each place with a small tightly made glass case, shown above. They made a very attractive display when neatly arranged in the cases. The lid slid out, making the cakes easily available. On the front of each case a card, neatly lettered, informed the public of the contents, silently selling themselves even if the attendants should fail to call the attention of the customers to them.

In addition to being a profitable enterprise, it was very successful advertising for honey for it was advertising by practical demonstration rather than by mere words.—Mrs. Benjamin Nielsen, Aurora, Nebraska.

W. S. HART, PIONEER BEEKEEPER

Financier, Banker, Orange Grower, and Beekeeper, With Honey Production Record.



W. S. Hart in 1894.

At the Valdosta meeting last December, F. W. Muth said to me, "Ernest, before you leave Florida I want you to see an old friend of your father's and mine, in the person of W. S. Hart, at New Smyrna, Florida."

"Is it possible," I said, "that he is still alive?"

"Yes, sir. I am going to make him a special visit and I want you to see this grand old man who broke the record in honey production in 1894."

So I went to call on Mr. Hart last April.

W. S. Hart belongs to a galaxy of noted beekeepers of the olden days, most of whom have since passed away. Somewhat broken in health as a result of a severe accident, this old stalwart of splendid manhood of the 80's and 90's still has a clear, alert mind as in his younger days.

Why was he one of the prominent leaders of the early days? He was one of the first to see the possibilites in Florida, which he adopted as his home state in the early 70's. Among other enterprises he made a modest start in bees. He also set out orange trees and it was not long before he became a leader in both enterprises.

In 1894 he broke the record for honey production. From 116 colonies he produced 101 barrels of 40 gallons each of honey in one season. This made a sensation at the time. There were many who considered him a fakir of the fish story type until my father, A. I. Root, visited him and verified his story. Mr. Harry Mitchell, one of the men Mr. Hart had trained, with 25 colonies secured a like yield per colony at the time. This proves that there was something in the method.

Of course, it goes without saying that it was a good honey year, exceptionally so. The locality was good, likewise with good soil, stately cabbage palmettos, saw palmettos of vigorous growth, gallberry and black mangrove.

Could he or any one else duplicate the yield in more modern days? Probably not. The annual habit of setting fire to the grass during winter and spring all over Florida has ruined much of that vigorous growth of saw palmetto, scrub palmetto and gallberry. Even the stately cabbage palmettos are singed and scorched halfway up the tree trunks. The freeze of December, 1934, killed thousands upon thousands of orange trees, another source of honey, and worse yet, stunted and killed the new growth bearing the orange blossoms. There was no orange honey in all Florida in the spring of 1935. Until these winter man-set fires are stopped, the yield of honey per colony will be low in Florida and elsewhere in the South.

Mr. Hart as he now is.

There was another factor in Mr. Hart's record breaking crop of honey—almost a barrel of honey per colony. Ahead of his time he advocated powerful colonies containing a large force of field bees. To that end he had young queens and saw to it that the bees had plenty of stores for brood rearing in early spring. Other beekeepers in Florida and elsewhere will do

well to give heed to Mr. Hart's practice—bees, more bees and still more bees of flying age when the crop comes.

He was so successful that he became a financier, a banker and a director and sometimes president of various enterprises. As he helped himself he helped others climb the ladder of success.

Now, owing to a fall and to his age, 85, he is a broken man physically. In the prime of his life he was a handsome man, tall, erect and a man of affairs. He was a leading figure at conventions and elsewhere.

His height was shortened an even five inches by the breaking of his back. This resulted in four curvatures of his spine. On top of all that the depression hit him hard. But that indomitable spirit is not broken.

Although suffering pain every day of his life, he carries his end of the conversation with all the vim and enthusiasm of his younger days. The hours that I spent with him I will not soon forget. It is an inspiration to meet such a man that disaster can not break.

Thank you, Fred, for telling me that I should meet this remarkable man—E. R. Root.

LOOKING OVER MAY GLEANINGS

What a Well Known Beekeeper Thinks About Current News

Whenever Gleanings comes and I get time to read it through I think of comments I would like to make if I would take time to sit down at once and write them.

H. E. Coffey's story of marvelous honey and wax production from algaroba blossoms by Japanese labor, under the management of a man who never lifts a comb, in the Hawaiian Islands, reminds me of stories told me by Dr. Phillips when I first met him in 1910 shortly after his visit to those Islands. It is an inspiration to large-scale beekeeping by the use of cheap labor in good producing districts.

The question of requeening raised by W. A. Rowland prompts me to tell how we have been requeening in northern yards. We put in plenty of packages in the spring, then during the summer see that all queens are clipped and that all poor queens are recorded so we know where clipped queens that should be replaced may be found. After the queens have quit laying in the fall there are plenty of days when it is too cool for bees to fly and try to rob, but not too cold to open brood-chambers and find queens. Having no brood to defend, the bees do not fight then as on cool days when there is brood. Queens are easily found, and new ones are more easily introduced than at any other time in the year.

Top supering often works well just as running a double brood chamber all summer must do since some good beekeepers recommend it; but neither is infallible and both must be taken with reservations. I find less trouble with swarming if the queen is confined to the single brood chamber just after the main flow starts and if the second super is added below the first. After the colonies get well into their stride and have enough supers for the average flow, the last or "safety-valve" super may well be added on top.

The Editor asks, "What if wet seasons come back?" All I can say is that the American Honey Institute will have to get more support than ever, and the Canadian counterpart formed during my absence South and whose name I have not learned to remember, will find lots of work to do. With us in Ontario it will mean the early part of flow from alsike and white clover continued into buckwheat by sweet clover and some old time enormous crops.—Morley Pettit, Albany, Georgia.

COMMENTS ON CURRENT ITEMS

Mr. Byer mentions sumac as producing a light honey, also that Mr. Rost had a small amount of basswood honey mixed with sumac. With us a very small quantity of basswood in any mild flavor honey light in color can easily be detected. We have considerable sumac here and are strongly of the opinion that sumac, while it gives a mild flavor and is light in color, has of itself very little distinctive flavor. I should liked to have tasted that honey. Just a few ounces of basswood in, say, a pint of sumac, would probably have improved the flavor.

While we are discussing sumac, have you ever tried the red cluster while sumac is in bloom, for smoker fuel? It has a lot of slow burning oil, will last half a day without re-filling a large smoker, and the barrel of the smoker is always clean. It does not foul the smoker.

Mr. Nielsen gave a good plan to keep grass down in front of the hives. Sheep in the apiary certainly make a good job of it. But not far from here a man used sheep for this purpose and a big husky ram got stung on the nose while eating grass in front of one of the hives. "Billy" butted the hive over. In fact, he made a first class job in putting nearly all the hives in the apiary out of business.

Here is about the best plan we know for killing grass. Waste motor oil can be had free here. We give the mechanic some honey and he is glad to let us have the waste oil. Cut the grass close and saturate the ground with the oil. A very good plan is to lay a piece of thick carton paper over the oil and lay small stones at the corners. When the grass is killed take the paper up and store it away, if it is required the next season.

About confining bees to the hive when being moved, our entrances when the harvest is on is one inch high and clear across the hive. We tack a piece of wire netting across the entrance and with crate staples fasten the inner cover to the brood chamber. That is all. We do the moving in early morning and have never had trouble. We put the hives on the truck at evening and get as early a start as possible.—J. F. Dunn, Ridgway, Ontario.

SPINSTER JANE SAYS—

I've almost come to the conclusion that it would be better to plan on buying new package bees every spring, in this part of the country, at any rate. One is bound to need them. I'll never kill mine in the fall, though, nor will I starve them to death. It will always be a sort of risk. It isn't because of our method of packing, it's the weather itself, and, as Mark Twain once said, "A great deal is said about it, but nothing is ever done."

Dandelions faded into white wraiths, and now only their skeletons remain. Bilberries, or sugar plums—so the English call them—are in bloom, but no clover can be expected to blossom for some time. Lack of rain retards growth, and we haven't had a good shower in weeks. This is not encouraging for the beekeeper who must feed his bees to keep them alive. Yes, beekeeping is no cinch here this spring. I find I must buy bees to build up my fast dwindling stock. And are we discouraged? "No! No! A thousand times No!"

Overcoming obstacles puts a woman on her mettle, gives her a more determined chin. Every knock should prove a boost, but "Woe Ho is me!" those knocks do hurt, and the boost is a long time coming. Even those popular chain letters are a long time bringing in that $1500 odd. Most men would quit cold, discouraged, but women are made of sterner stuff. Patience is born in them. Endurance also is part of their birthright.

I think I lack a queen. At any rate, the few remaining bees are laying down on the job; are not busy as they would be were there more baby bees to feed and provide for. As with humans, the home without children is more apt to go to pieces than the home where there are so many; dad and mother must work late and early to make ends meet. Unless those children are quintuplets, they make a great deal of work and worry. In the beehive, the more children, the more need to work, and the more to help work.

The hard workers are really the most contented, and get the most out of life. Near us lives an old gentleman of 93 years, who, up until this year, did his own farm work. Now "I tire easily," he says, and is surprised at his weakness. He owes his longevity to work, saying, "It is better to work out than to rust out." Another pioneer is an octogenarian, a Scotchman, and a lover of the "pipes," which he plays on special occasions, such as when his political party wins an election. He, too, grumbles, "I don't know why it is, but I seem to be short of wind, now-a-days." Oh, these remarkable old workers!

And now to cap the climax, I am in a quandary. A certain society, of which I am a member, has put on a debate, "Resolved, that the man of the house should carry the pocketbook," and, worst of all, I am named as leader of the affirmative. Isn't it ridiculous! The first thing I know, I'll be trying to make myself believe some of the arguments I must advance—in order to win. One just can not let her friends down, and think of such statements coming from the mouth of one who has always boasted that a spinster's Paradise is No Man's Land! Worst of all, I fear the men-folk, yes, and the catty women as well, may think I mean it all. Was ever a spinster in such a predicament?—Spinster Jane.

Editorials

Honey Crop Prospects

The heavy and frequent rains all over the country, particularly in the white clover belt of the East, mean a big crop of honey—larger than for five years past when drouth was so widespread. True, the cold weather was a draw-back. Beekeepers would do well not to run all their bees for extracted honey. Better use some for comb honey. There is seldom too much good comb honey.

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Giant Stingless Bees (?)

Recently there have been appearing in magazines and newspapers articles carrying rather sensational headlines implying that these bees are an accomplished fact. We have received so many letters asking about them that we feel that something should be said.

The headlines appear to be the creation of the reporter rather than that of the owner of these alleged giants, but there are some statements in the article credited to the owner that should be mentioned.

The comb measurements showing nine cells to the two inches for the giants rather than the normal ten show nothing more than we find in ordinary natural comb from normal bees. See Cowan's book, "The Honey Bee," pages 180 and 181, where he shows from numerous measurements even greater variation in cell size.

Again, the claim is made that there are 263 fewer bees to the pound of these giant bees than of the normal. The number of bees in a pound, as every package bee man knows, varies from less than 4000 to more than 5000. This wide variation in normal bees is due to the amount of honey or nectar in the honey sacs. The figures 263 mean nothing unless we know whether they represent an average of numerous weighings and counting of bees of different bees from different queens. Even if there were that difference it would not justify a claim for giant bees.

We would not discourage the worthy effort to secure by cross breeding a bigger and better bee. That some progress has been made is not here denied; but when an otherwise readable and informative popular article contains the vision of a honeybee as big as a bumblebee that will carry a bigger load, fly faster and farther, we feel like the fellow, who, when he saw the giraffe, said, "There hain't no such animal," and in our humble opinion there never will be a honeybee as big as a bumblebee—not in this generation or many to come.

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Sting Less, But Not Stingless Bees

The newspapers are also publishing numerous short articles on so-called stingless bees. Some of them are quite within the realm of fact and some are misleading. There are no stingless commercial, *Apis mellifica*, bees. The true stingless bees of Mexico, *Melipona*, and of the tropics have no stings, but they can bite most unmercifully. They are of no commercial value as honey producers.

But there are large numbers of ordinary bees, *Apis mellifica*, that *sting less* than some of their kinds and these are the ones mentioned in the newspapers.

It should be remembered that there are very gentle bees that sting less but will sting viciously when the conditions are not to their liking. On the other hand, a vicious strain of bees can be handled like kittens when the conditions are right. The writer has frequently handled in his lecture work the crossest bees that could be found in the locality. He has picked them up by the handfuls, put them in his mouth or put a hatful on his head without a sting.

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Early Swarming

Reports received from some of the northern states indicate more early swarming this past spring than for a number of years. One commercial beekeeper reported seven swarms out at one time.

Warm weather in late March started early brood rearing. The warm spell was followed by a prolonged cold spell which prevented bees from flying normally. Weak colonies with insufficient stores,

that were not fed, dwindled and died. Populous colonies with ample stores, in most instances secured enough pollen during the cold spell for moderate brood rearing. Field bees kept in their hives by inclement weather, conserved their energy and thus their lives were lengthened somewhat. This conservation of bee life apparently more than offset the loss incurred by a curtailment of brood rearing due to unfavorable weather. When warm weather came, and in some instances, even before the weather turned warm, some of the populous colonies swarmed, apparently because of congested conditions within the hives. It is preferable to have populous colonies well supplied with honey, even though some of them do swarm, rather than poverty-stricken colonies too weak to swarm.

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Bee Package Code Still in Force

We are informed by Thos. Atchison, one of the members of the committee of package men, and by Prof. J. M. Robinson, Managing Director of the Marketing Agreement under the A. A. A. that the bee package code is not affected by the Supreme Court decision on the N. R. A. Bees and queens will continue to be sold under the A. A. A. code as before. That means that violators or chiselers will be prosecuted as before.

Gleanings does not hesitate to say that the A. A. A. code relating to the sale of bees and queens has worked most advantageously to both the buyer and seller of package bees. The southern shippers under the A. A. A. have done the biggest business in the history of package bees and through it all there have been fewer complaints than there were when there was no code.

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A Little Trick That Works

Some years ago the Editor, while producing honey commercially in northern Michigan, learned the following trick of the trade from Samuel Coulthard, Copemish, Michigan, then one of the most successful comb honey producers in this country. Here it is:

Have all queens clipped, also have ready some small wire cages suitable for caging queens. It is unnecessary to have them supplied with candy. When a swarm issues during the main honey flow and no increase in colonies is desired, find the clipped queen at the entrance of the hive, put her in a cage and then place the cage temporarily in the entrance of the hive from which the swarm issued. The swarm, not accompanied by their queen, will return to the hive.

Examine the combs of the brood chamber carefully and destroy all but one queen cell. Then place the caged queen in the top super, either between two combs, or, if comb honey is being produced, at the side of the follower board. The colony will not swarm again the same season. The bees continue working normally and feed the queen through the wire screen. In about two weeks a young laying queen will usually be found in the brood chamber below. The old queen can then be introduced to a queenless colony or otherwise disposed of. Occasionally the virgin queen may be lost in mating. When this occurs the old queen may be released in the brood chamber. Strange as it may seem, the bees will continue to feed the old queen through the wire screen, even for a month or so after the young queen appears below, or, as long as the honey flow lasts.

This method of handling swarms keeps the working force of the hive intact. Furthermore, requeening is accomplished automatically.

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Honey in the Baking Business

In our last issue, page 345, we mentioned the fact that the American Honey Institute, at the very height of its best work, might have to suspend operations for lack of funds unless the beekeepers of the country came forward at once with their back pledges and their dollars. We have been making some inquiries and we learn that never in all the history of the organization has it done more and better work. The writer noticed as he drove from Florida that "honey crust bread," or honey breads of some sort, were on sale not only all over Florida but all over the southeastern states. It would seem that the bakers all at once have discovered that honey is not only a means of keeping bread, cakes and cookies soft, but the very name honey is a very important means of giving the product a publicity

that it would not have if they did not use it. It is clear that the Institute is responsible for this.

When Dr. H. E. Barnard started the Institute he called attention to the fact that he had been connected with the baking trade for years and that he believed he would be able to introduce honey to the baking trade in a way that had never been done before. When he first took hold of the American Honey Institute he prepared a booklet entitled "Honey in the Bakeshop." This little booklet contains a large amount of special matter on the uses of honey in the making of breads, cakes and cookies, and along with this were a good many recipes. Mrs. Jensen is sending this all over the country.

Again, the American Honey Institute was fortunate in being able to make a contact with John H. Griffith. He is a bakery engineer and has been making the rounds of the bakeshops in a number of the middle western states. He has become very much interested in honey and writes the Institute regularly. He has written a number of special articles on the use of honey in bakeries for "Bakers' Helper," one of the best bakery journals in the country. This has been reprinted and has been sent out broadcast by the American Honey Institute.

In this connection, it might be interesting for the reader to know that Mr. Griffith will have quite an extended article on the use of honey in baking in our next issue. Watch for it because you will find it something worth while.

Again, the American Honey Institute has been in contact with the Bakers' Consulting Bureau of South Bend, Indiana. This bureau has developed a formula for honey that goes under the name "Honey Crushed Wheaten Bread." This bureau sells the entire program to bakers furnishing the formula, distribution plan, sales talks, ad layouts. In one city alone of 60,000 inhabitants the production of this bread required from 1000 to 1500 pounds of honey per week. In Madison again, the Gardner Baking Company are using some 1500 pounds of honey weekly. The Institute does not know how many clients the Consulting Bureau has in the different states, but newspaper ads on this bread have been received from Illinois, Michigan, Minnesota, Wisconsin, Indiana, Iowa, Missouri, Nebraska and Colorado, so far.

The writer has been through one large baking shop, the name of which the owners prefer not to have divulged to the public, but here are the facts. It is buying honey by the carload. We have actually seen honey mixed in the mammoth bread dough mixers. We have seen that honey bread go through the big baking ovens at the rate of 6000 loaves per hour for twenty-four hours. The writer was told that honey made the bread softer, lasts longer and that, "The very name honey helps to sell the product."

We could give you contact after contact made by the American Honey Institute that now has a standing in nearly all the bakeshops of America.

There is scarcely a day goes by that there are not requests from bakers for information on how to use honey and if the American Honey Institute has to disband just for want of funds, just because those closest to the honey business are indifferent—well, it will be too bad. If any of you want to know what the American Honey Institute is doing in the way of baked goods, send to the American Honey Institute for their samples of literature. You in turn are requested to take this to your local baker. It will help you sell your honey.

In closing we wish to make it as plain as we can that the American Honey Institute has now reached the height of its greatest usefulness. Not only is it helping to popularize honey for the table, but has succeeded in getting the big bakers of the country to put the honey in their products as they never did before. If the Institute had done no more it would be worthy of your support.

Those of you who have been giving $1.00, $5.00 or $10.00 or larger amounts and have failed to send in your pledge should do so at once. There is in prospect in the eastern states a big crop of honey. Weather conditions have been very favorable for developing the clovers. If ever there was a time when the American Honey Institute is needed to help find a market for honey, both for the table and in the bakeshop, it is right now. If the Institute has to stop for want of funds even temporarily, it may not be able to start up again. What is worse the bakers will resort to cheaper sugars.

We happen to know that the allied industries are giving a bigger lift to the Institute than ever, but they can not continue to go on unless they have the help of the rank and file of the beekeepers all over the United States and Canada.

From North, East, West and South

SOUTHERN CALIFORNIA.—Here it is the 5th of the month again and June is off to a fine start. The weather is ideal; the ground is very dry near the surface, but all deeply rooted plants promise well. White sage is blooming and the wild buckwheat will be on in two or three weeks.

Since our last letter we attended a meeting of beekeepers at Pomona, most of whom were large producers of orange honey. The principal topic was honey prices, also storing honey in a U. S. bonded warehouse at Upland, and getting a loan on the same, the money to draw 4 per cent plus one per cent carrying charge, insurance, and storage. Representatives were there from the orange honey producing counties of Los Angeles, San Bernardino, Riverside, and Orange. It was the concensus of opinion that we would secure about 50 per cent of the crop that was predicted in February. We see no reason for changing the opinion expressed in our last letter about the orange honey crop. We should get as much if not a better price than last year.

Black sage which promised so well early in the season was damaged by frost and will not come up to expectations. Bees are getting some nectar from white sage. Wild buckwheat is looking well and should be yielding in about two weeks. Weather conditions will determine the crop from this wonderful honey plant. With the temperature around 90 it is at its best, but a few days at 110 in the shade soon turns it brown and dries it up.

Reports from the great mesquite and alfalfa ranges in Riverside and Imperial counties are not encouraging. The season is late and bees in many apiaries are not up to honey-gathering strength.

But a letter from southern California at this time would not be doing justice to the beauty of our great out-of-door unless mention was again made of the gorgeous display of blossoms of all kinds. One man who knows much of the country and spends much time out of doors told me not very long ago that he has seen flowers blooming in the Temescal (a valley about 12 miles south of Corona) that he has not seen before in the eighteen years of his acquaintance with the valley, flowers that are found only in the desert part of southern California. He has also located a red larkspur, a variety not found before in these parts. It is not easy to account for the wonderful display. One geologist says the rains coming as they did, early, regular and abundant are to be credited for the unusual phenomenon.

Honey and beeswax prices have not been established for 1935.—L. L. Andrews, Corona, California.

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NORTHERN CALIFORNIA.—In our younger days we were cautioned not to talk unless we were sure we had something worth while to say. Now when we are older we wonder if we should write unless we can be sure that we have something worth while to write about. The uncertain conditions of beekeeping make one wonder if it would not be as well to wait until a more settled condition prevails before writing.

Buyers of honey tell us the crop is great and prices must come down. This kind of propaganda has an effect upon some beekeepers, especially those who load their honey onto the truck and come to the market knowing little of the existing conditions. These beekeepers help to lower the price of honey. Then there are beekeepers who are not careful enough in the handling of honey. They are really a menace to the business. Beekeepers who preach over-production of honey should be better informed. We do not produce too much; we distribute and consume too little.

Here is an opportunity for all of us. The American Honey Institute has found the way, and what is needed now is for all of us to do our part and to

encourage the Institute by promptly sending in the amount we have assessed ourselves. Let the amount be what we believe we should give to promote our own business.

The subject of buckeye poisoning of bees is attracting the attention of beekeepers in many parts of the state. Splendid research work on this subject has been done by the University of California and the U. S. Pacific States Laboratory. Many apiaries have been saved by the instructions given. Here in Alameda County there has been but one report of heavy loss of bees by buckeye in the past ten years. None of us doubt the reports investigators have made, but because of the fact that so little loss has occurred here beekeepers are prone to wait a little longer, so we are allowing bees to remain in the buckeye in preference to taking the advice of investigators to move out.

Word has reached us of the passing of D. D. Stover. A good man has gone. His chair will be vacant at our next meeting and we shall miss him. The American Honey Institute has lost its most enthusiastic supporter. This means that we must do more.—Cary W. Hartman, Oakland, Cal.

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COLORADO.—The drouth has been broken with a vengeance in this section of the country. Colorado, Kansas, Nebraska, and Wyoming felt the power of a too-sudden oversupply of moisture during the last week of May. In this immediate vicinity, fortune has favored us with a welcome supply of much needed moisture. The most prolonged drouth in the history of this section, was ended with May bringing us prolonged general, gentle rains. Old Mother Earth opened her bosom and absorbed every drop of the 6.71 inches. At the end of May, there had fallen more rain than had fallen during all of 1934, insuring ample water supply, full irrigation reservoirs and plenty of snow in the hills.

Some of our neighboring counties have been less fortunate and have received not only ample rain but have been flooded by streams, swollen by foothill torrents. Some beekeepers have suffered considerable damage by whole apiaries being washed away. Radio reports enabled some to save apiaries before the floods struck, but it was impossible to save all. Added to the flood damage, is the injury to crop prospects in the broad Platte Valley river bottoms. Excellent stands of river bottom sweet clover are completely obliterated in places by silt deposits and erosion.

Despite the damage caused, we are not unmindful of the great benefit to this section of the United States. Assistance is being extended to the suffering sections while the more favored appreciate the restoration of parched fields to more bountiful crop prospects.

Bees have come to this season with more populous colonies than is customary. There has been a distinct tendency toward the desire to swarm. The rainy weather has, however, caused the bees to revise their desires in that direction. Several colonies have not only destroyed their queen cells but have had to curtail brood rearing, due to lack of pollen. Dandelion has bloomed and gone with little benefit to the bees in this section. In fact, it will probably be necessary to do considerable feeding between this time and the alfalfa flow, which will apparently be later than usual. Yellow sweet clover is reported as near to bloom in some sections.

A delegate group of beekeepers met with the Governor in May, in the interest of apiary inspection. Apparently the impression on the chief executive was favorable, since he assured those in attendance that they had no need to worry on that score.—R. G. Richmond, Fort Collins, Colorado.

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TEXAS.—The long drouth of several years' duration has come to an end. The eastern part of the state had abundant rainfall in April. All through May the rains came in increasing amounts and distribution, changing the condition of the entire state. The northwest part, which has been considered the home of dust storms and drouth, is now a beautiful green farming country. With the coming of the rains many honey plants, including horsemint, commenced to bloom, but cold and cloudy weather kept the bees at home. During the month there were only a few bright days when they could work. However, there is hardly an apiary that can not boast of a normal crop of horsemint honey now and this plant has promise of two more weeks of honey flow.

On a visit to the north border of Texas, where beekeeping is almost unknown, we saw literally square miles of mesquite in

full bloom and no bees. It looked as if here was great possibility for future beekeepers. A visit was made to Basil Cairnes, Claremont, Kent County, who has kept bees for thirty years at that place. He has 85 colonies. He reports that this is the first time that he has ever seen mesquite in bloom and that his honey flows come from horsemint and composites. This year he anticipates a good crop. During the visit there it was too cold and wet to even open a bee hive. In extreme west Texas there are several ranges of sand hills where horsemint and other honey plants are plentiful. Beekeepers report an average of about fifty pounds per year and say they can sell cut-out comb honey locally at a very good price. Their report is that the locations are very scarce.

On this trip, especially in northwest Texas, a honey substitute consisting of honey, granulated sugar, and water was found in almost every store. Honey was also found but in much less quantity. The storekeepers report that the honey substitute sells better than the pure honey, this being due to a lower price and preference of the buyers. It may be that this experiment of firms placing this product on the market is a solution for the honey producer. If honey will sell in combination with something else to a better advantage than in its purity then why not find substitutes which will demand large quantities of honey in their composition?

The Annual Meeting of the Texas Beekeepers' Association to be Held on July 29 and 30.

July 29 and 30 are the days for the annual meeting of the Texas Beekeepers' Association. Dr. Bilsing is chairman of the program committee and states that he will have a fine program. He hopes to have an out-of-Texas speaker this year. We have the promise of attendance at the meeting of quite a number of well-known beekeepers who have not met with us in many years. If the Beekeepers' Association is worth anything to the beekeepers of the state the younger members must come in and take their place in its organization as many of those who have for years carried on the work of this organization have died, moved from the state, or ceased to be active. All young beekeepers are invited to come in and help make the Association worth while.

Some little early chunk comb honey has been offered on the market but the bulk is extracted and is being sold at the same prices as the last year's product. The average price in Texas north and west of San Antonio is 35 cents a pound in glass. Little honey was found in tin.—H. B. Parks, San Antonio, Texas.

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OKLAHOMA.—Our spring has been cloudy and chilly. I examined my bees early and was astounded at the amount of stores they still had. With the exception of a few cold snaps, the winter has been rather mild. The colonies wintered very well. Several days ago I examined my colonies and found that on the average they had very little honey or pollen. The hives were overflowing with bees, although there didn't seem to be such a great amount of brood. I did not find any queen cells.

The colonies that had very little honey to see them through the winter and spring were in a bad fix when the chilly spring weather arrived. The colonies that had plenty of stores used considerable for brood rearing, but because they were prevented from flying freely, due to bad weather, a shortage of pollen was noticeable.

The Cool Spring Has Caused the Bees to Be Unnaturally Cross.

Never before have I seen bees so inclined to sting. In seasons past, I have worked much with my bees without veil and gloves, but to open a hive this spring without being fully protected was a sure cure for rheumatism. I wore ordinary cotton gloves, and about one-half dozen bees in each hive would succeed in stinging me on the hand. I had begun to believe my bees were just naturally cross, but upon hiving a swarm for a neighbor, I not only was stung on the hands but in the face, where the veil had pressed too close. After hearing similar tales from other beekeepers of their bees being unusually cross this spring, I removed the blame from the breed of bees to the inclement weather.

The prospects for a good honey crop, I believe, are pretty good. Despite the fact that the bees were greatly hindered in the spring, the colonies that had plenty of stores went ahead. The last two weeks, up to the present time (June 7) the weath-

ei has been ideal. With plenty of moisture from recent rains, the bees have been making up for lost time.—Clarence J. Tontz, Stillwater, Oklahoma.

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IOWA.—The weather seems to be able to go to extremes after a series of three years in which conditions were getting excessively worse. The season of 1934 will go down in the history of Iowa as one of the most severe drouth years ever experienced. The forecast for 1935 was a recession from these extremes, but experience to date has indicated that it is a complete reversal.

The question which is confronting the producer at the present time is the amount of clovers which may be available and the probable blooming date of these important sources of nectar. Yellow sweet clover has been increasing extensively in the past three years in spite of the dry weather and in many areas has become a honey plant of some importance. It is especially valuable because it normally blooms from May 20 or 25 until the beginning of the white sweet clover flow, June 5 or 10. This year on June 10 the yellow sweet clover will barely be coming into bloom. Many producers in the north-

White Dutch Clover Stages a Comeback.

eastern section of the state are jubilant over the return of the white dutch clover, which will probably yield nectar in some areas in 1935 and will be available in much more extensive areas for production in 1936.

The weather conditions have been wholly unfavorable for the spring development of colonies of bees. The winter loss was severe enough, but there was very heavy spring loss experienced because the bees could not fly to get the nectar that was normally available and the reserve stores in the hive would not permit any expansion in colony population.

Many reports indicate that there has been considerable amount of swarming, and in spite of the fact that the colonies were weak in population. The explanation back of this condition which seems to be a paradox is that the colony population which did develop was retained in the hive and there was in reality a stimulus afforded equal to the crowded colony population and therefore the various colonies undertook the other steps of swarming, and actually did swarm. Surely such colonies will be materially reduced and will not be able to profit in a satisfactory manner from the summer flow of clover.

Much interest is being expressed by the Iowa producers in the station which has been established at Atlantic, Iowa, in charge of Frank C. Pellett. This station is the result of a co-operative agreement between Dadant & Sons and the Iowa State College, the Extension Service and the Experiment Station. The object of this station is to make tests on the various strains of bees to determine what variation there may be in resistance to disease. It is hoped by the end of the season that some definite results will be available for the producers of Iowa and other states on this very important matter which is confronting honey producers everywhere.

Two summer meetings are scheduled for this state. The Iowa Beekeepers' Association is co-operating with the Woodbury County beekeepers in holding a meeting near Moville, Iowa, which will include a two-day program on July 11 and 12. The program should prove attractive to producers who find it possible to attend. The object of this program is to have as many beekeeper participants as possible. There will be a large number of contests with appropriate prizes. The chief prize will consist of five colonies of bees and will be awarded to the lucky number in the drawing.

A meeting is scheduled in co-operation with the Pottawattamie County Association at Council Bluffs on July 13. This is a one-day meeting at which the producers of Nebraska are invited to attend. The talks will be very few and short. Time will be devoted to contests and to visits of successful apiaries in that vicinity.

The new bulletin issued by the Extension Service entitled "The Control of American Foulbrood" is available for distribution upon request. The State Apiarist Reports covering the operations of the year for 1934 have been received and will be sent out only upon request. This report contains articles of special interest to those who are looking forward in the matter of honey production. Two items, the "Rearing of Better Queens" and the "Place of the Honeybee," in the pollination of red clover should be of interest to every honey producer.—F. B. Paddock, Ames, Iowa.

KANSAS.—Old Mother Nature certainly can change things around in a hurry. During March, April, and the first week in May, western Kansas had exceedingly dry weather and dust storms. Central Kansas was bemoaning the fact that there was not much moisture for vegetation. This has all changed within three

Instead of Drouths This Year We Have Floods.

weeks to the other extreme of having too much water, and, in the river valleys, serious floods! The normal rainfall for the month of May in the eastern three-fourths of Kansas has been exceeded by 1 to 4 inches. Due to the severe flood conditions which have been coming in from the West and the Northwest, Manhattan has experienced one of the worst floods since 1908. The raging torrents of the Republican and Kansas rivers have torn out bridges, destroyed farm land and crops, and taken many lives. One beekeeper who had an apiary located near Manhattan on bottomland of the Kansas River, saved the apiary from the flood by suspending the hives on a platform made of poles and ropes. The platform was suspended from trees which were on the river bank. Before this beekeeper and a friend could vacate the vicinity after finishing the work with the apiary, a sudden rise of water trapped them and they were "treed" for over sixteen hours. In the path of this flood water, many colonies and apiaries, which were located in these various river valleys, have been lost. Other colony losses have been due to the drouth of 1934. Drouth destruction is rather slow, but the destruction by flood is extremely rapid.

If the vegetation, such as sweet clover, in the valleys is not seriously injured by a coverage of silt, the plants probably will secrete nectar. Rainfall has been sufficient to cause a good growth of the sweet clover plants as well as alfalfa in all areas except the extreme southwest part of the state. In eastern Kansas it has been so wet that alfalfa was rotting in the fields and it was impossible to cure it for hay. Floods also have been prevalent in southeastern, as well as central Kansas. Yellow sweet clover was in full bloom during this rainy period and the bees were unable to gather much nectar.

During the last week of May, prospects for a honey crop this year began to brighten and the comparison of weather conditions were similar to those in 1927. During that year Kansas produced a large crop of honey which approached what might be known as a "bumper" crop. The spring and summer of 1927 was one which might be termed cool, interspersed with sunshine and rain to produce a copious nectar secretion. The season this year started out in a similar manner, except that the rainfall for the last three weeks of May exceeded the normal amount for that month. This condition has produced the serious situation of flood conditions in the river valleys.—R. L. Parker, Manhattan, Kansas.

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INDIANA.—The first three weeks of April were cold and rainy and for a time all brood rearing ceased. Consequently bees were late in building up. Fruit bloom and dandelions also were retarded. However, there were several days of fine weather which allowed colonies to gather a considerable amount of nectar and they are now going strong. Fruit bloom has been heavier than for many years and, with the exception of early blossoms, there has been no injury by frost in this locality.

Weather conditions have been favorable for the growth of clover, although there are fewer plants on account of last year's drouth. More rain has fallen than in any spring for more than a decade. With a precipitation of 8.43 inches in May, the first five months of 1935 show a total precipitation of 22.31 inches, according to our local weather bureau. June has started out with an abundant rainfall but temperature has been below normal and clover is at least ten days late. It is now just coming into bloom, June 8.

Honey is practically all cleaned up. Many inquiries are coming in for large lots but there is none in this locality except in small lots to supply local demand.

American Foulbrood on the Run if the Promised Clean-up Goes Through.

We are promised a thorough clean-up of American foulbrood in this county and we are hoping that it can be carried out successfully this year. Much time was spent last season and many badly diseased colo-

nies burned, which, in my opinion at least, is the only rational mode of treatment and the only sure way of eradicating the disease. The result has been fewer new cases. In our own yards we have found no disease so far this season after going over all colonies three times. But with careless neighbors one never knows when he is to get a new dose.—E. S. Miller, Valparaiso, Indiana.

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MANITOBA.—A few weeks ago I found myself in a peculiar situation. It was my turn to speak on the radio broadcast. My subject was "Spring Care of Bees." By a stroke of luck I finished with a two-minute talk on the good qualities of honey. Just before I stepped to the microphone the announcer started off on a spiel on the fine qualities of Bee Hive Corn Syrup, and when I finished he went ahead with another. Now wasn't that a fine mess for me to be sandwiched in between!

It made me dizzy. I began thinking—when did corn syrup start coming out of a bee hive, but that was what he said—Bee Hive Golden Corn Syrup. I believe, however, that they went too far with their advertising over the quintuplets. One man called at my office and said he had heard so much talk over the radio about quintuplets and corn syrup that he was afraid to have his wife eat corn syrup.

The Increased Price of Two Cents on Jams May Help Us to Get a Better Price for Our Honey Another Year.

Because of the activities of the Canadian Marketing Board, jams are increased in price two cents a pound. The wholesale grocers claim, and I believe rightly so, that the demand for honey will be increased accordingly. Too bad we are sold out of honey. It perhaps will help us to get a better price next year.

The package bee business has been very successful as far as deliveries are concerned, but the quantity was not as great as last year. It is, however, too soon to report on this as a few packages are still coming. Trucking took quite a slice of the business this year. One man who trucked says his expenses were only 15 cents a package while express charges ran from 50 to 90 cents a package, according to the point of shipment.

We have received some interesting reports on wintering and on package bees of late. One young man reports that he bought 51 packages of bees—these were delivered and hived on April 25 on the equivalent of two full combs of honey saved from last year. The queens came in dry cages and were introduced by filling the hole in the queen cage with partially granulated honey—about a teaspoonful in each. These hives were not examined until May 16 and every queen was on the job. Only two queen cages had strips of comb built to them as the thin cages allowed the frames to be pressed close enough to prevent the spur of comb generally found when a thick cage is used. I wonder if the feeding of sugar syrup to packages in the spring is not the cause of much supersedure. Regarding winter reports, we got the finest kind of results when eight fully sealed combs of honey were left for stores, whether the bees were packed or wintered in cellars.

Just as I am penning these lines a letter has come to my desk announcing that competitive honey classes have been restored by our Royal Agricultural Winter Fair Board at Toronto. These classes we have always considered provided the finest advertisement that we could get for our honey. When a western man won a prize in Toronto and it was announced in the papers here his neighbors drove many miles to get that man's honey and many bought from him when they would not have thought of buying honey at all unless the interest was aroused in some such way.

The weather has been cool and bees are not building up any too well but we are getting abundant moisture and everything points to a crop of honey as western Canada at this date is a sea of green.—L. T. Floyd, Winnipeg, Manitoba.

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MINNESOTA.—Minnesota has had an unusually cool, backward spring which prevented the bees from taking full advantage of the dandelion and fruit bloom flows. As a consequence colonies have not built up as rapidly as they should have. Conditions were very bad for early packages, but have been much better for the later ones. In many cases packages put out as late as the middle of May are ahead of those put out in April. A heavy

frost occurred as late as June 6 in northern Minnesota.

The Drouth Has Been Broken and Minnesota Is Enjoying a Normal Spring Once More.

The brighter side of the picture for Minnesota lies in the fact that moisture conditions through the spring have been almost ideal. Timely rains occurred through April, May, and the first part of June. It will be necessary, of course, for moisture conditions to remain above normal throughout the summer in order to make up for the drouths of the past few years.

The Minnesota Beekeepers' Association will hold a joint summer picnic meeting at Crookston, Minnesota, on July 19. Each beekeeper should bring a basket dinner. No formal program is planned. There are two things that will be of special interest to those attending, one, the Northwest Agricultural Experiment Station of the University of Minnesota, and the other, the famous apiaries of the Sisters of St. Benedict, where so much splendid work has been done in developing new uses for honey and beeswax. The meetings will be held in these apiaries.

Mr. Frank Rojina of Excelsior, has been appointed Superintendent of the Bee and Honey Division of the Minnesota State Fair. Mr. Rojina has had considerable experience in this kind of work as he has for several years had charge of the bee and honey exhibits at the Hennepin County fair, and has been a successful exhibitor at the Minnesota State fair for many years. Write Frank A. Rojina, Excelsior, Minn., at once to arrange for exhibit space.

In two different parts of the state beekeepers have reported an unusual number of king birds in apiaries. One man reported finding two king birds dead in his apiary, but the cause of death was not known.

The Minnesota Beekeepers' Association is making an effort to encourage the formation of county or district associations. The annual dues for the State Association are $1.00, which also automatically makes one a member of the Minnesota Horticultural Society, with which our society is affiliated, and entitles him to receive the publication of that society, the Minnesota Horticulturist, without any extra charge. In all cases where the annual dues of $1.00 are paid through the secretary of the local association, the local secretary retains 25 cents for the local organization and sends 75 cents to the secretary of the State Association. In cases where more than 25 cents per member is wanted for the local association, the additional amount is collected by the local secretaries. A number of new associations have been organized recently, and it is hoped that other counties or districts will organize this year. Many beekeepers can find time to attend local meetings where they can not make the longer trip to attend the annual state convention. It requires only a small number of beekeepers to form a county organization. Where there is no local association, beekeepers should send their one dollar to the office of the State Secretary in St. Paul.—M. C. Tanquary, St. Paul, Minn.

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WESTERN OHIO.—The weather all through April and May was cool and wet, which was hard on bees but ideal for clover, which is looking vigorous. Sweet clover is more plentiful and is looking good. Clover that was planted this spring is getting a good start, which will mean a bumper crop for 1936 if weather conditions continue favorable. Farmers have sown more alsike than usually.

In some areas white clover is looking fairly plentiful and in some sections the severe drouth of the last two seasons has almost completely killed it. Prospects in these localities are not so encouraging. However, sweet clover may make a fairly good crop.

At this writing, June 9, bees are not in as good condition as they were a month ago. Many colonies that were not supplied with sufficient stores to carry them through the cold and wet weather starved from lack of sufficient stores. Beekeepers must learn that in this north country, where bees are not gathering nectar for about seven months, colonies should be supplied with a full-depth super of stores. Fifty or sixty pounds is not too much for each colony, especially during a backward spring like this. The weather during the last two or three weeks has been abnormally cool and cloudy. This cool weather has restricted the activities of bees, lessening the amount of pollen and nectar gathered. Many colonies are three weeks behind in brood rearing.

In our yards colonies are, in a good many cases, up to swarming strength. In fact, in one yard were found seven swarms hanging on bushes and trees. This yard is in a good location where the spring flow from dandelion was good, and, of course, the colonies were well supplied with stores.

Old stocks of honey are nearly all sold, and all in all the season doesn't look so bad. A fair crop may be secured if the weather ever becomes normal.—Fred Leininger, Delphos, Ohio.

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ONTARIO.—For the last ten days—this is June 10—heat and moisture, those miracle workers, have made a great change in beekeeping conditions. April was cold and dry. May was moist for the first week and then cold and unusually dry. Prospects were not promising. Then we had warm weather and a total precipitation of four inches of rain locally, the moisture falling gently and the soil absorbing it all as it came. While the subsoil is still dry here, yet this splendid series of rains has caused clover and all other vegetation to come on with amazing rapidity. Wherever there is clover, prospects are good for a crop of honey. Bees lost their field bees badly during the long period of dry cold weather with much sunshine, but colonies had wintered well and our own bees are now in fair condition. Many colonies are starting cells before we have been able to get supers on.

By way of a change as compared with former times, we are worrying more about marketing than prospective crop conditions. Some surplus honey carried over is a source of anxiety as some beekeepers with honey on hand will be crowded for storage room if a normal crop is secured.

In common with other correspondents of this journal, I receive letters from almost all countries in the world, most of them being interested in beekeeping. Many letters have been received from New Zealand and one recently from "down under" gave me a strange sensation as it described the present period as their "autumn." Here on this continent beekeepers are entering their busiest period with all kinds of prospects as to what the crop will be, while in New Zealand the rush is over, and they are planning how to spend the winter. But when I think of the very mild nature of their "winter," I am reminded that they probably have different plans than we have for spending that season. Many beekeepers do little in the winter in the way of real manual labor. In our case much of the winter season is spent in hunting the big European hares that are now quite plentiful in most parts of west and southwest Ontario, and are gradually spreading eastward each year.

Recently in these columns I made reference in a somewhat caustic way, to the new regulations regarding shipping and grading of honey for export purposes. While I may have been a bit dense, as is often the case, when these export regulations were being discussed in conventions and at other meetings, yet it is a satisfaction to know that nine out of ten beekeepers think as I do. Not a single beekeeper that I have met is in thorough accord with these regulations as they apply to inter-provincial trade, and many are in agreement with me in labeling this business as the supreme example of asinine legislation affecting our industry. One extensive eastern beekeeper who is not at all impetuous under ordinary circumstances, writes me saying among other things that, "If we could line up some of these fellows responsible for a lot of this rot, as we do the jacks (big hares) and sprinkle them with bird shot it might do some good." Pretty drastic treatment no doubt but many others endorse these sentiments. At any rate, not one in a dozen had any idea that it was proposed to apply the honey exporting regulations to interprovincial trade. According to the regulations every shipment sent into a neighboring province must be inspected, graded and marked.

Economists in general are now agreed that the major causes of the present dilemma that business finds itself in, are trade restrictions and barriers between countries of different nationalities. If this is true, then what can we expect if we introduce the same principles to different localities of the same country? If it is necessary for provinces to enact such laws then by all means apply it to counties in the same province, and then to make the scheme a real success, have the municipalities in different counties do the same. I certainly want to register my protest to this and similar legislation as being worse than useless.—J. L. Byer, Markham, Ontario.

Stunts for Programs at Meetings

MALITTA FISCHER JENSEN

A review of the program of beekeepers' meetings the past year indicates a repetition of ideas and the usual subjects on inspection problems, bee behavior studies and production principles. They are all very necessary. Yet, isn't it true that to get beekeepers and their families to come regularly, we need something on the program that is different, that assures fun as well as knowledge, and that is novel? Such a feature causes advance conversation because it develops curiosity. Beekeepers and their families begin wanting to attend that meeting. They start anticipating the fun, the advantages and fellowship that meeting will bring them. They talk up the gathering and advance publicity through conversation and press results.

Increased Attendance

Contests of the suggested types are bound to stimulate individual participation. The more individuals that become interested the more we have at the meeting and that is exactly what progressive beekeepers and beekeeping leaders wish. For of what use is an excellent program and a glorious day for the gathering if a goodly number of beekeepers do not come! Individual participation stimulates attendance, increases local publicity and improves beekeeping standards. New initiative is brought to the field and as those attending tell others of the help this meeting gave them, watch your beekeeping family grow.

Competition

By having contests for the children, ladies, beekeepers and special groups like the bakers, friendly competition is developed. Responsibility is shifted from one group to another and the result is a better and more profitable time for all.

The Lunch

This is the important event of all gatherings. All meals served to beekeepers and their families should be flavored and sweetened with honey. There are menus and recipes ready for the asking at American Honey Institute.

Suggested Subjects

For Beekeepers: My Biggest Beeyard Blunder; Live Bee Demonstration; My Funniest Experience with the Bees; My Best Honey Sales Talk; My Most Peculiar Experience with Bees; Why I Keep Bees; The Best Joke on a Beekeeper.

For Children: The best honey slogan (ten-word limit), the best bee slogan (ten-word limit), the best poem on bees and honey (original).

For the Ladies: My Favorite Honey Recipe and Why; How I Help Sell Our Honey; What I Do in the Bee Yard.

For Bakers: Why I Use Honey in My Baked Goods; What My Customers Say About My Honey Baked Goods.

For High School Girls Interested in Home Economics: Demonstration of My Best Honey Nut Bread; Demonstration "My Favorite Honey Candy"; Demonstration "The Way I Like to Use Honey."

For Everybody: The funniest four line rhyme on honey; the funniest four-line rhyme on the honeybees. (Should be original.)

Time allowed: 3 to 5 minutes depending upon number entering. After the program is announced, those planning to enter should hand a card to the committee in charge indicating which stunt they expect to enter.

Judges

The selection of judges is indeed important. The more prominent the individuals asked to serve in this capacity, the more publicity are your newspapers likely to give the program. It would probably be more desirable to have persons in no way connected with the industry do the judging unless it was the contest on demonstration of live bees. In that case it would be well to have at least one member of the judging team to be someone familiar with the bee demonstration technique.

If you include a contest in each of your meetings this year, it would be well to vary the subject each time and select different judges for each meeting. The more prominent local people you include in your judging teams, the more good will and interest will develop. It is well, too, to give all the stores an opportunity to cooperate in providing prizes if they are interested. This can be done if no store is asked to provide prizes more than once.

Prizes

Everybody likes to win a prize. It is not important to have expensive prizes but rather well chosen ones. Boys and girls under ten are more happy with a game, ticket to a Shirley Temple movie or pass to a circus that may be coming to town. The ladies like items that would seem extravagant if they were to purchase them, but nevertheless represent something they have always wanted. For men, if they are the smoking type, a good supply of cigars or cigarettes or perhaps a "detective" thriller would be just right.

Just News

EDITORS

C. M. Gwin, Director of Research for Baldwin Laboratories, Saegertown, Pa., is doing some valuable research work on honey. Mr. Gwin is the son of James Gwin, who was formerly the President of the National Honey Producers' Association.

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Plans are under way for the Minnesota and North Dakota Beekeepers' Associations to hold their summer meeting at Crookston, Minnesota, July 19. Mount St. Benedict will be host to the beekeepers. The meeting will begin at 10 a. m. A large attendance from the Red River Valley and adjoining territory is expected.

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Beekeepers in New Zealand number 7579. The colonies number 115,568. The largest beekeeper operates 2000 hives and produces 110 tons of honey annually. The average production is 60 pounds of honey per colony. Good colonies produce 200 pounds apart from 60 pounds for winter supply. The highest crop recorded is 418 pounds.

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The Woodbury County Beekeepers' field meet will be held at a beeyard on the George Willir farm on highway No. 20, four miles west of Moville and ten miles east of Sioux City, Iowa, on July 11 and 12. The program will include demonstration of apiary management, a general picnic dinner, one evening entertainment at Moville and a tour of some large yards of interest. Beekeepers of adjoining states are invited to attend.

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Bee diseases, particularly the brood diseases, are to be the main topics for discussion on the beekeepers' program of Farm and Home Week at the Massachusetts State College. Farm and Home Week this year is scheduled for July 23 to 26 inclusive, with the bee program on the 25th. Mr. J. I. Hambleton, senior apiculturist of the United States Department of Agriculture; George Meigs, president of the Massachusetts Federation of Beekeepers, and J. H. Merrill, of Raynham, former apiculturist of Kansas, are the principal speakers listed on the program.

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A recent article in a Cincinnati newspaper states that Dr. N. Zaiss, a Vienna doctor, says that honey is an excellent agent in the care of wounds. In fact. he states that it is superior to all other ointments. Dr. Zaiss treated several thousand cases of every degree of severity and reports not a single failure. His treatment consists of filling the wound completely with strips of gause dipped in honey, which leaves the wound perfectly clean after 24 hours.

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The joint meeting of the Ohio State and Montgomery County Beekeepers' Association will be held on July 26 and 27, at Dayton, Ohio, with the program, as follows: Ward Ruse, Dayton, Ohio, President of the Montgomery County Association, address of welcome; W. E. Dunham, United States Extension Worker, Columbus, Ohio, "Reducing the Cost of Honey Production by the Use of Two Hives"; N. C. Yoest, Sales Manager Millersport, Ohio, "Selling Your Crop of Honey to the Best Advantage"; Chas. A. Reese, State Apiculturist, Columbus, Ohio, "Inspection Work for the State of Ohio"; O. K. Cunningham, Farm Agent for Montgomery County, Dayton, Ohio "Planting Farm Crops Which Produce Honey"; M. J. Deyell, Editor of Gleanings in Bee Culture, Medina, Ohio, "Modern Tendencies in Beekeeping"; Guy W. Miller, Extension Economist, Columbus, Ohio, "Cost of Producing Honey on a Commercial Scale." E. R. Root will be present. One-half hour is allotted to each speaker followed by a 10-minute discussion of the subject, followed by a round table discussion on subjects of interest to the beekeepers present. The grave of L. L. Langstroth will be visited. For further particulars write Penn G. Snyder or Dr. W. E. Dunham.

Gleaned by Asking

THE EDITORS

How to Control Swarming

Question.—I have 25 hives of bees, some of which are run for comb honey and some for extracted honey. My biggest trouble is swarming. Is there anything I can do to prevent swarming?—John Hall, Indiana.

Answer.—While swarming can not be absolutely prevented in all cases, it can be controlled to a certain extent. One important factor in swarm control is that of having each colony headed with a young queen. As a rule, colonies headed with old queens swarm quicker than colonies headed with young queens. It is essential to give colonies plenty of storage space for brood rearing and incoming nectar. Congestion within the brood chambers of hives is considered the prime cause of swarming. It stands to reason that a colony that becomes congested because supers are not added in time may start queen cells and make preparations for swarming. On the other hand, a colony provided with ample comb space is not so likely to swarm. Then, too, some ventilation in addition to the wide entrances of the hives is important. Some beekeepers raise hives up off the bottom boards by placing shallow blocks between the hive bodies and bottom boards. In the production of comb honey it seems necessary to examine the brood chamber of each hive at least every six or seven days to destroy queen cells, if any are found. Colonies devoted to the production of extracted honey are not so likely to swarm, if supers are supplied in ample time, therefore a weekly examination of brood chambers may be unnecessary.

Distinguishing American Foulbrood from European Foulbrood

Question.—I understand that there are different brood diseases. There appears to be something the matter with the brood in one of my hives. How can I tell American foulbrood from European foulbrood?—George Morrow, Missouri.

Answer.—American foulbrood and European foulbrood are two entirely different diseases, requiring quite different treatments. American foulbrood attacks sealed cells mostly, the cells being sunken in appearance and showing irregular perforations in the cappings. The diseased larvae are yellowish brown to blackish brown, and as they decay, have a very offensive odor, become ropy or stringy, and may be stretched out several inches in a delicate thread. After this stage the dead larvae dry into hard scales which stretch lengthwise in the bottom of the cells and adhere tightly to the cell walls. European foulbrood attacks unsealed brood mostly. The diseased larvae are usually a light yellow. This decayed matter may also have an unpleasant odor but not usually as offensive as in the case of American foulbrood. The diseased larvae reach a ropy stage, but instead of roping as a fine thread, stretch out as a coarse granular thread. When scales are formed they do not adhere tightly to the cells as in the case of American foulbrood, but may be removed. A good discussion of the distinguishing characteristics and best methods and treatment of the two diseases is given in the A B C and X Y Z of Bee Culture. If one has trouble in determining with which disease his colonies are affected, he should send a sample of the comb for diagnosis to the Bureau of Entomology, Washington, D. C. For this purpose a piece of comb about five inches square and containing a number of affected larvae should be sent in a wooden box.

Distinguishing Supersedure Cells from Swarming Cells

Question.—I understand it is possible to tell swarming cells from supersedure cells. What is the difference?—Blaine Williamson, Oklahoma.

Answer.—As a rule, swarming cells occur during the swarming season. Swarming cells are practically all of the same age, and there are likely to be ten or a dozen and sometimes more in the hive. Usually they are found along the bottoms of the combs. On the other hand, supersedure cells may occur at any season of the year when the bees are active. Sometimes a single supersedure cell will be started and then a little later on another supersedure cell will appear. Usually there are not more than two or three supersedure cells. They are usually found near the center of the combs. Occasionally, however, when supersedure cells are started during the swarming season, a colony will swarm with supersedure cells. This does not happen very often.

How to Handle a Food Chamber During the Honey Flow

Question.—There appear to be different methods of handling food chambers during the honey flow. Some of my colonies are used for producing comb honey and others for extracted

honey. How do you suggest that I handle them? —Robert Graham, Wisconsin.

Answer.—The best method of handling food chambers during the honey flow depends somewhat upon the nature of the honey flow and locality, also the kind of honey being produced. In the production of comb honey it is customary, at the beginning of the main honey flow, to put as many of the combs of brood as possible into the lower brood chamber and to place the food chamber containing the remaining combs of brood and honey, on a hive stand beside the parent colony and to supply this food chamber with a cover. If a ripe queen cell is available to give the food chamber hive, all well and good. If not, the bees will rear a queen in three weeks from larvae. Another method is to pile the food chambers which will contain some combs of brood along with the combs of honey in a pile ,four or five supers high. At the end of a good honey flow these supers will be filled with honey and the colony will have a queen. At the close of the honey flow, after the surplus honey is removed, the supers can be put back on the hives from which they were taken. The bees in the food chambers will unite readily with the bees in the parent hives when this uniting is done rather late in the fall. If the uniting is done earlier in the season, it may be necessary to use a sheet of newspaper with a few small holes punched in it between the two hives, to unite successfully. When one has only one colony of bees producing comb honey, it is possible to set the food chamber above the inner cover (which will serve as a temporary bottom board), on top of the pile of supers and make a small opening in the front of the inner cover for the bees to use. In this way, no extra equipment in the way of a hive stand and cover is needed. As soon as the surplus comb honey is taken off, the food chamber can be let down on to the brood chamber. Some producers of extracted honey are now letting each queen have access to the combs in the double-story or food chamber hive throughout the year. By this method, all unnecessary manipulations of the food chamber are eliminated.

When to Take Off Honey

Question.—I produce both comb and extracted honey. Some say that extracted honey should be taken off as soon as the combs are filled and before they are capped. Do you think this advice is right?—Chris Lattimer, West Virginia.

Answer.—By rights, combs of extracted honey should not be taken off the hive to be extracted until they are at least three-quarters capped over. It is preferable, of course, to have all of the combs entirely capped. This will help to insure having honey that is properly ripened. If honey is taken off the hive before it is properly ripened, it may ferment later on after it has been extracted from the combs. If you have a sufficient number of supers to hold the crop, it would be well to leave the honey on the hives until the honey flow is over. You will then be assured of securing properly ripened honey. Comb honey should be removed from the hives as soon as it is thoroughly capped. It is a problem to get all of the sections in a super capped over. During a good honey flow the bees will cap the comb honey sections readily, but during a slow honey flow the bees are likely to leave some parts of the combs uncapped. It is well also to remove supers of comb honey that are capped over before they become travel-stained. If the sections are left on the hives too long, they become darkened by reason of the bees traveling over them.

Hiving Swarms

Question.—Should I hive a swarm back in the hive from which the bees have come, or should I put the swarm in a new hive on a new stand?—Paul Jones, North Carolina.

Answer.—When a swarm issues and alights on a bush or tree, the hive from which the swarm has issued should be set on to a new stand at least five or six feet away from its original position. A new hive containing either frames of drawn combs or full sheets of foundation should be placed on the old stand, and the swarm should be shaken in front of the new hive on the parent stand. Ordinarily, the bees will enter the hive. It is sometimes advisable to take from another hive a frame of brood and put it into the hive intended for the swarm in order to induce the bees to become established in their new home more readily. Supers that may be on the old hive should be transferred to the new hive. The bees that are in the fields while the swarm issues will return to the new hive on the old stand and thus the swarm will be strengthened. In about six or seven days the parent hive that has been set aside may be moved to a new location at least 15 or 20 feet away. If this moving is done during the middle of the day the field bees when returning will go into the parent hive and this hive will be further strengthened. In due time there will be a laying queen in the parent hive which has been set aside.

Talks to Beginners

M. J. DEYELL

Due to the variety of conditions that exist in the various regions and latitudes, it is difficult if not impossible to lay down any set rule or method of apiary management for beginners throughout the season. Each beginner should make a study of his own locality with a view of applying the apiary management that will meet conditions. As a rule, each season is different than the preceding one. This means that beginners in order to be successful must observe conditions closely and be ready to adjust their methods of management to meet changing conditions.

Recent Rains Change Prospects

It looks now as though the drouth has been definitely broken. It is remarkable how quickly moisture and suitable atmospheric conditions can change prospects for a honey crop. The abundant rains have brought on the clovers in various sections of the country. Beekeepers in alsike and white clover regions may enjoy a good honey flow. As a matter of fact, at this writing, June 20, the early clover honey flow has already begun in the clover regions, but the weather has been unsuitable for much nectar secretion as yet.

In some sections of the southern United States there is usually a dearth of nectar during July. In other regions of the South a honey flow may occur. In the sweet clover and alfalfa regions of the middle and northwestern states, also Canada, the main honey flow is usually at its best during July.

Swarming May Occur

Due to an early spell of warm weather in late March and early April throughout the North, brood rearing started earlier than usual. The warm spell was followed by a long cold spell which restricted brood rearing. The activities of the bees generally throughout the North have been hampered by inclement weather. In some instances, it has been impossible for bees to collect pollen for brood rearing. This may bring about what we might call a secondary period of intensive brood rearing occuring during the major honey flow instead of prior to the flow. This may mean excessive swarming. Beginners should be prepared for this.

Keeping Colonies Contented and Storing

While swarming can not be prevented, it can be controlled to a certain extent. The best swarm control measure during the honey flow is that of keeping each colony well supplied with supers. If the beginner fails to put on supers in ample time, colonies become crowded for room, brood chambers become congested and this is likely to result in swarming.

During a good honey flow a strong colony stores a surprising amount of honey in a week or even during one day. The writer has a brother, a commercial beekeeper in Ontario, Canada, who keeps a careful record each year of his best colony. One season this colony stored over 400 pounds and during one day in late June, 26 pounds of honey. It pays, therefore, to have each colony supplied with an ample amount of supers.

Supering During July

In regions where the main honey flow begins to taper off at the end of July, supers should be given more sparingly, especially comb honey supers. It is important to watch the work of the bees in the supers, as well as the condition of the honey plants for indications of the close of the honey flow. As a rule, when honey is coming in well, the bees are easy to handle. When the honey flow stops rather abruptly the bees are likely to be cross and hard to handle. Sometimes, however, a good rain will start the honey flow again after it has slackened off due to dry weather.

As already stated in the June Talks to Beginners, we advocate and use the method of supering from the top in the production of extracted honey. It is a simple matter, by this method, to add another super on top when it is needed instead of lifting off filled and partly filled supers in order to put the fresh super on the bottom of the pile. This method of supering on top results in well-filled combs. If perchance, the last super given is not needed, the bees will not use it. However, the combs in the supers below will be well filled. This will result in less labor in extracting, because it takes less time to extract a given amount of honey from fewer

combs than it would to extract a like amount of honey scattered through a larger amount of partly filled combs.

Watch for Robbing

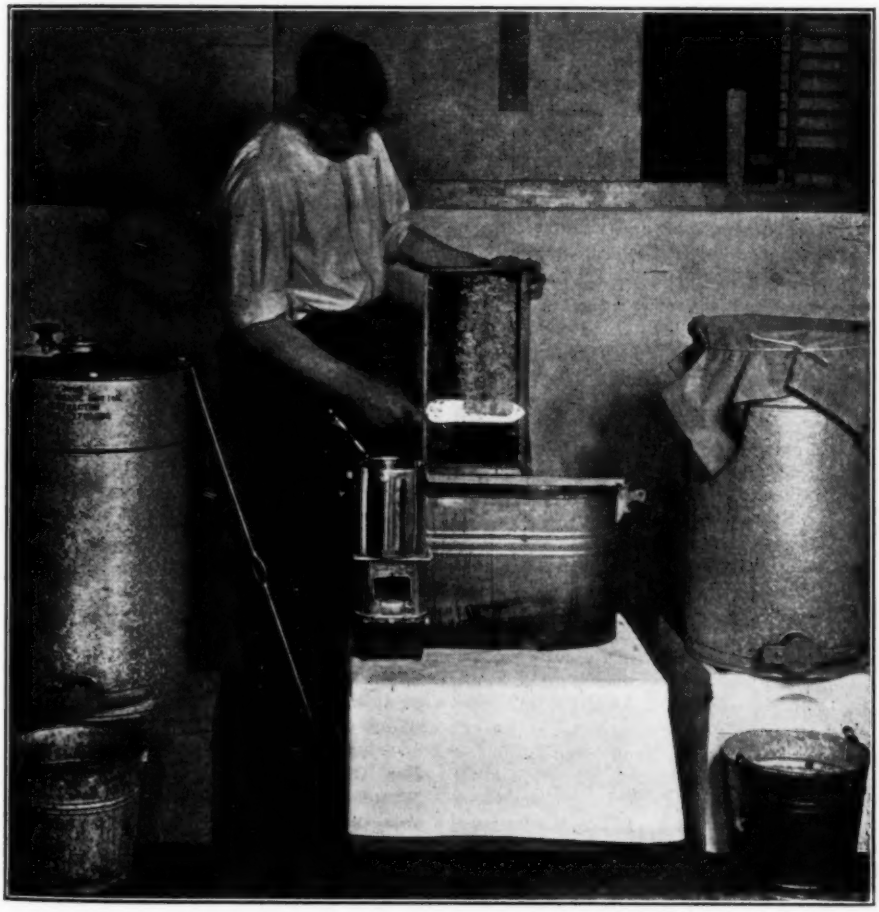
If the honey flow closes rather abruptly, bees are usually inclined to rob. Beginners should avoid opening hives unnecessarily. Honey, if taken off the hives and placed in the apiary house should be kept under cover. The apiary house door should be closed tightly. If no robbing is allowed to get started in the apiary the bees are more easily handled and there is not likely to be any trouble as a result of people near the apiary getting stung.

How and When to Remove Comb Honey

Comb honey supers should be taken off as soon as the sections are filled and capped over. By lifting up one end of the super and looking up between the rows of sections one can usually tell if the honey is ready to come off. As a rule, the upper parts of the sections are sealed first. If finished sections are left on the hives too long, they will become travel stained or discolored.

When there is a honey flow on, a super containing finished comb honey sections can be removed by smoking the bees at the top of the super. After most of the bees are driven down, the super may be stood up on end, on top of the lower super, and the bees may be brushed off the bottom of the super. A few bees are bound to cling to the super while it is being carried into the honey house or cellar. If the super is stood up beside an open window,

(Continued on page 432.)



An inexpensive extracting equipment for the back-lot beekeeper.

Heads of Grain from Different Fields

An Acrostic

Gleanings earns a
Livelihood through
Energy, labor
And
Never-ceasing
Industry.
No effort is spared in
Giving service and
Satisfaction to all patrons.
—G. R. Craft, San Marino, Cal.

• • •

Honey for Diabetics

Dr. Desiderius de Beszedits, Coyuca de Catalan, Guerrero, Mexico, in an article in the Medical World, October, 1934, on the "Treatment of Diabetes," writes the following: "Just one more thing to conclude: the employing of honey diet in the treatment of diabetes may look anti-scientific, anti-medical, even kind of silly, to the theoretical-minded uninitiated, or to the superficial observer. Just at this writing my bee flocks (a cross between the lazy, native, Indian, wasplike bee and the large, ever-busy Hungarian—also called Italian bee, I imported from Europe) are busy gathering honey from a plant now in bloom called retama or tecoma mollis, retania or tronadora. We make tincture and fluid extract of this plant (leaves and roots) also and give it to my diabetic patients in drop doses in manzanilla tea when I can not obtain the leaves for tea that I use in preference. The tea, tincture and fluid extract of this plant have a decidedly and markedly antiglycosuric and eupeptic quality and its anti-polyuric effect is notably rapid. Now we all know that the bee sucks the quintessence of the flower juice, adds something of its own to it (saliva and perhaps something else) and so manufactures it into honey. Each country has a large number of provenly medicinal plants free to the bees to gather their honey from their flowers. Making our deductions, it is not difficult to understand why, on this basis, honey fits into the curative diet for diabetes. Most likely it is just the proper food for the depleted hungry glands."

Bee (ting) His Way Through School

Four years ago, when John Norred of Piggott, Arkansas, was only thirteen, a neighbor discovered he had more bees than he himself could properly take care of. John, or Jack as he is better known, asked if he might be of any help. The neighbor made Jack the proposition to furnish him with four swarms to be work-

John Norred in his apiary, only a part of which is shown.

ed on shares. Jack was to do all the work of taking care of these four swarms, for which his share was to be half of the new swarms and half of the honey produced. For his first year Jack's share was 200 pounds of honey. The following year this was doubled, while the last two years yielded 700 and 1100 pounds respectively. This would have been much more, especially last year, had it not been for the drouth. As it is, Jack is satisfied. He now has 17 swarms of his own and this year expects to

secure over a ton and a half of honey if no further bad luck occurs. His bees have helped him finish regular school and they are now helping him through high school, besides adding cash to his bank account. —Geo. G. Bergman, Wheaten, Illinois.

• • •

Mixing Bee Syrup in Washing Machine

An easy and simple way for mixing sugar syrup for spring feeding is to mix it in the family washing machine. We used this system this spring and found it saves labor and was the cleanest way we have yet discovered. Our washing machine being in the basement, we filled it half full of boiling water. Then we started the agitator and slowly poured in sugar to the required amount. Then putting on the cover we let the machine run for about five minutes, when the sugar was all dissolved. Sixty-pound cans were then placed under the drain spout and easily filled. The newer type of all metal washing machines can readily be cleaned, both before and after mixing the syrup. —H. J. Rahmlow, Madison, Wisconsin.

• • •

The Drones Came Back

Last June I moved an average colony from home to an out-apiary about one and one-half miles away. The following day I watched to see if any bees might return to the old location. I discovered quite a large number of drones had returned, but no workers. Does this prove drones fly further than workers, or that they don't mark their location as well?—A. D. Wood, Boise, Idaho.

• • •

Suppose You Try This

It is a well known fact that a tin can will not rust inside if filled with honey, but if there is only a small amount of honey, as that sticking to the sides or bottom of an extractor, it will draw moisture and tend to destroy the galvanizing and rust the can. An extractor should be thoroughly washed and dried as soon as the work of extracting is done. If kept dry there will be little trouble with rusting. However, in time the zinc coating will disappear to a considerable extent, due, probably, to the acid action of the honey, zinc being easily affected even by weak acids. To prevent this, we have paraffined the inside of the can. It may be done by heating the inside with a blow torch, following up with hot paraffin and melting it in as you go. Care must be taken not to burn the zinc or the outside paint. A coating of this kind will last many years, is perfectly sanitary and is to be preferred to any kind of paint.—E. S. Miller, Valparaiso, Indiana.

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A Dependable Salesman

The other day a man asked if I had honey for sale. I told him I had disposed of all my honey; but I directed him to a beekeeper who had honey to sell. This man said he had picked up some literature by the American Honey Institute advising honey for sweets and for the health. We can never tell when the American Honey Institute is creating a sale for our honey. All their information is dependable. We all should support the Institute if we want it to survive. And remember, if it does not survive it will be our funeral.—Ira Lambright, Goliad, Texas.

A colony of bees have survived three winters in this horse chestnut tree, in the village of Kinderhook, New York.

TALKS TO BEGINNERS

(Continued from page 429.)

the bees will soon leave it and return to their hive.

Bee Escape More Convenient

By far the easiest way to take off finished supers of honey is by means of the bee escape. This small device is fitted into the hole in the bee escape board (which is the same as the inner cover used on hives having a double cover). The bee escape is placed under the super, or supers, to be taken off. It takes about a day for the bees to work down through the bee escape, which prevents their returning to the super. The supers may then be taken off and carried to the house. Usually they are entirely free from bees.

Removing Extracted Honey

In removing supers of extracted honey, especially if the supers contain standard combs, it is a distinct advantage to use the bee escape. Sometimes, however, the beginner with one or two hives and only a few supers for each hive, may wish to remove some of the filled extracting combs during the honey flow and put empty combs in their place, in order to make room for incoming nectar. When the combs are thus removed, the bees may be brushed off the combs with a bee brush after being taken out of the super. Combs of honey should not be removed from the hive until they are at least three-quarters capped over. If the honey is extracted before the combs are quite well capped, it is unripe and is likely to ferment or sour.

Extracting Equipment for Backlot Beekeeper

Combs of honey should be extracted as soon as possible after being removed from the hive. The beginner who is producing extracted honey does not require an elaborate outfit. He should have at least a small two or three frame hand-driven extractor, an uncapping knife, an oil stove of the smallest type to be used for heating water in a ten-pound pail for the purpose of keeping the uncapping knife hot, a wash boiler to receive the cappings as they are shaved from the combs, and a small honey tank. As will be seen from the picture, this wash boiler has a notched stick resting on top. In the stick is a small nail pointing upward on which the end-bar of the frame is placed while the comb is being uncapped. Fine mesh cheesecloth for straining the honey is placed over the top of the honey tank. It is necessary to place some sort of a support under the cheesecloth, such as chicken netting, wired securely over the top of the tank, or, better still, a strainer support screen from a supply house. The center of the cheesecloth should sag somewhat to make room for pouring the honey after it is drawn from the extractor.

Fasten the Extractor Securely

The extractor, no matter what the type, must be securely anchored to the floor by steel rods, having turnbuckles to take up the slack. The extractor should be elevated high enough on a box so that the honey gate can deliver the honey into a pail. By rights, the extracting should be done during a warm day, in a room with screened windows to keep out the bees. Frequently the bees will rob at the close of the honey flow, as already stated, and it is therefore quite necessary to have the honey house bee proof.

The cappings are shaved from the combs with the heated uncapping knife. The combs are then placed in the pockets of the extractor. To avoid breaking combs, part of the honey should be extracted out of one side at slow speed. The combs should then be reversed and all of the honey extracted out of the second side. The combs are then reversed to the first position and extracted clean. It is important to sort the combs so that the weight will be equally distributed in the extractor. Even with both of these precautions observed, the extractor must be solidly anchored to the floor. The stay rods must be drawn taut.

Keeping White Honey Separated from Dark

In some regions throughout the North, considerable buckwheat is grown. Sometimes buckwheat begins to bloom in late July or early August. It is quite necessary for beekeepers to get the white honey removed from the hives if possible, before the buckwheat honey flow starts in order to avoid having the white honey darkened.

In afalfa and sweet clover regions, there is not likely to be much buckwheat grown. The honey flow from these clovers may continue throughout July and the greater part of August. The crop may be left on the hives until the close of the white honey flow.

Importance of Requeening

In the northern United States and Can-

(Continued on page 445.)

BUY AND SELL HERE

CLASSIFIED ADS

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate—7 cents per counted word each insertion. Copy should be in the 15th of month preceding.

HONEY FOR SALE

The reliability of honey sellers is not guaranteed, although strict references are required.

FOR SALE—Clover extracted. F. W. Lesser, Fayetteville, N. Y.

FANCY clover comb and extracted. Howard Grimble, Holcomb, N. Y.

CLOVER honey, 60's, 6½c to 7½c lb. C. J. Baldridge, Kendaia, N. Y.

WHITE clover comb honey. Charles Guhl, Route 7, Napoleon, Ohio.

CHOICE white clover honey in 60-lb. cans. J. F. Moore, Tiffin, Ohio.

MICHIGAN white extracted in 60's. M. H. Hunt & Son, Lansing, Mich.

CHOICE Michigan clover honey, new 60's. David Running, Filion, Mich.

FOR SALE—Extracted and comb honey. M. W. Cousineau, Moorhead, Minn.

NEW crop clover extracted honey in new sixties. D. R. Townsend, Northstar, Mich.

WRITE me for prices and samples of honey. I can please you. Thos. S. Sherfick, Shoals, Ind.

CLOVER-BASSWOOD honey, 2 60's, $8.40; buckwheat, $7.20 here. W. F. Vollmer, Akron, N. Y.

1935 crop Michigan white extracted honey in new 60's. L. S. Griggs, 711 Avon St., Flint, Michigan.

MICHIGAN'S finest well ripened white honey in new 60's. Sample, 15c. Jay Cowing, Jenison, Mich.

MICHIGAN choice light clover honey, heavy body, fine flavor, in sixties. Leland Farnsworth, Davison, Mich.

CLOVER honey, choice, ripened on bees. Satisfaction guaranteed. Case or quantity. J. Stahlman, Grover Hill, Ohio.

FOR SALE—300 cases No. 1 to fancy clover comb honey; carrier lots, $2.50 per case; cellophaned, $2.75; amber extracted, 6½c. H. G. Quirin, Bellevue, Ohio.

CLOVER honey from Cloverdale, Ohio's finest white clover extracted. Sample, 15c. Prices upon request. The Cloverdale Apiaries, Cloverdale, Ohio.

NEW YORK State comb and extracted honey, buckwheat and clover, any quantity, all size packages. Five-pound pails my specialty. Edward T. Cary, Midland Ave. and Tallman St., Syracuse, N. Y.

RASPBERRY HONEY—In 60-lb. cans, for $6.00 a can. In 10-lb. cans by mail, postpaid up to and including fourth zone, for $2.00 a can. Sample by mail, 20c. Elmer Hutchinson & Son, Lake City, Mich.

FOR SALE—Well ripened white sweet clover honey. Don't let your customers be without honey. The stock we furnish will please them. Write today for prices. Colorado Honey Producers' Association, Denver, Colo.

FINEST new clover comb, $3.00 case. Clarence Engle, Kearneysville, W. Va.

FINE quality New York State extracted honey. Emery Horton, Holcomb, N. Y.

MICHIGAN white clover, carload or less. Porterholm Apiaries, Adrian, Michigan.

BARGAIN prices on extra white, extra fine clover honey. Edw. Klein, Gurnee, Ill.

NEW crop clover comb and extracted, about July 10. C. B. Howard, Geneva, N. Y.

ALSIKE clover honey, new crop, 8c lb., in sixties. Sample 25c coin. Otto Hurd, Phalanx Sta., Ohio.

CLOVER honey, new crop, ready for delivery July 15. We try to please. M. E. Ballard, Roxbury, N. Y.

FINE quality palmetto or mangrove honey in new sixties. Sample, 6c. Peter W. Sowinski, Fort Pierce, Florida.

NEW crop white clover honey, both comb and extracted. Ready to ship July 15. F. J. Smith, Castalia, Ohio.

FOR SALE—Extracted honey. Let us quote you price on a case or truckload. Any size container. The Hubbard Apiaries, Onsted, Mich.

MY new crop comb and extracted clover honey will be ready for market about July 12. Description and prices on request. Carlton D. Howard, Ovid, N. Y.

HOWDY'S COMB HONEY — New crop white, clover ready for shipment. Special offer to New England for September delivery. Howard Potter, Ithaca, Michigan.

OUR new crop best Michigan clover honey will be ready for the market the last half of this month, July. We are ready to contract with you for your needs during the coming season. E. D. Townsend & Sons, Northstar, Michigan.

HOWDY'S EXTRACTED HONEY—Some 1934 crop still on hand. New crop will be ready August 1. Special offer to New England for September delivery. Howard Potter, Ithaca, Michigan. Edward Batchelder, 238 Lincoln Ave., Cliftondale, Massachusetts.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTE—We will not guarantee any honey buyer's financial responsibility and advise all beekeepers to sell for cash only, or on C. O. D. terms except when the buyer has thoroughly established his credit with the sellers.

WANTED—Light and amber honey. Riverside apiaries, Russell, Illinois.

WANTED—Comb and extracted honey. Mail sample, state quantity and price. Sherfick Farms, Shoals, Indiana.

WANTED—Honey and beeswax. Beekeepers will find it to their advantage to communicate with us. Please send sample, state quantity available and prices. California Honey Company, Hamilton & Company, Agent, 108 W. Sixth St., Los Angeles, California.

WANTED—White clover extracted honey, new cans. Clover Blossom Honey Co., 712 Kossuth St., Columbus, Ohio.

WANTED—Carlots of honey, state quantity, shipping point and price. Mail sample. Bryant & Cookinham, Inc., Los Angeles, Calif.

FOR SALE

NOVICE 2-frame honey extractor for sale. Reasonable. E. A. Cushman, Prairie View, Ill.

25 JUMBO supers with combs, on Dadant wired foundation. Reuben Moin, Rice Lake, Wisconsin.

PIERCE automatic grafting tool, faster, easier, better job. Price, $1.50. Pierce Apiaries, 340 Crosby St., Pasadena, Calif.

ROOT-COWAN two-frame reversing extractor, 9½-inch pockets. New condition. Sell for $18.00. W. D. Coleman, Ashley, Ohio.

FOR SALE—Slightly used 45-rack Root Simplicity extractor and 40-gal. tank. H. L. Case, 156 West Ave., Canandaigua, N. Y.

ELECTRICAL comb-honey cutting knives, uncapping knives, $10.00 each; with thermostat, $14.00. Paul Krebs, 8000 Fulton Ave., Detroit, Michigan.

BEST quality bee supplies, attractive prices, prompt shipment. Illustrated catalog upon request. We take beeswax in trade for bee supplies. The Colorado Honey Producers' Assoc., Denver, Colo.

FOR SALE — Fine quality queen-mailing cages; Root quality bee supplies; both comb and extracted honey. Orders filled promptly. Write us or drive over M53, fifty miles north of Detroit. Hamilton Bee Supply Co., Almont, Mich.

BEES AND QUEENS FOR SALE

FINE Italian queens, 50c each. Will exchange for honey. G. H. Merrill Apiaries, Greenville, S. C.

DIEMER'S three-banded Italian queens, 50c each. Send for circular. J. F. Diemer Co., Liberty, Mo.

BEST Mountain Gray Caucasians, select queens, 50c each. Package bees at code price. P. B. Skinner, Greenville, Ala.

THREE-BANDED Italian queens that produce good honey gatherers and are gentle to work with. Alamance Bee Company, Geo. E. Curtis, Mgr., Graham, N. C.

OFFERING best Italian queens and package bees; also bee supplies. Booking orders for spring delivery. Satisfaction guaranteed. N. S. Gladish, 5 Hobbs Road, Nashville, Tenn.

CAUCASIAN package bees and queens. After June 1, untested queens, 50c each. 2-lb. pkg. with queen, $1.95 each; 3-lb. pkg. with queen, $2.55 each. Prompt shipment, safe arrival. Lewis & Tillery Bee Co., Greenville, Ala.

NORTHERN-BRED old reliable Italian queens, bred for honey-getters, hardy, gentle bees, safe delivery and satisfaction guaranteed. Select untested, 75c; select tested, $1.50. Willie Groom, Gashland, Mo.

PACKAGE BEES, nucleus and queens. Three-band Italian or gray Caucasian, lowest code price. Express or parcel post shipment. Light shipping cages. Prepaid prices on request. Safe delivery guaranteed. Crenshaw County Apiaries, Rutledge, Alabama.

LOWER prices on Italians. Select young laying queens, 50c each. Two-pound package with queen, $1.95 each. Three-pound package with queen, $2.55 each. Prompt service and satisfaction guaranteed. Little River Apiaries, Box 83, Gause, Texas.

CHOICE bright Italian queens that are a pleasure to work with and be proud to own. The stock has been bred and selected in the North the past 32 years for good winterers, hustlers, gentleness, and fine color; 75c each; dozen, $8.00; breeders, $6.00. Emil W. Gutekunst, Colden, N. Y.

GOLDENS—These queens are pure Italians, line bred, for honey as well as color, good honey gatherers, very gentle to handle. Health certificate. Safe arrival. Satisfaction. Untested, 50c; tested, $1.00; select tested, $1.50. D. T. Gaster, Rt. 2, Randleman, N. C.

EXTRA YELLOW Italian queens that produce bees a little more yellow than the three-banded; more gentle and just as good workers. Untested, 50c each; tested, $1.00 each; select tested, $1.50 each. Health certificate and satisfaction. Hazel V. Bonkemeyer, Randleman, Rt. 2, N. C.

SITUATION WANTED

POSITION wanted by young college man to manage apiary or assist. L. E. Scudder, Driscoll, North Dakota.

MISCELLANEOUS

TWO-FRAME extractor. Give condition and price. Edward DeWitt, Port Carbon, Penna.

KIMBALL player piano; used; exchange for package bees or equipment. Whittaker, 6818 Wentworth, Chicago, Ill.

BEEKEEPERS—Improve sources of nectar by planting vitex trees, or seed. Two-year-old trees, 40c; one-year-old trees, 25c. New tested seed at $1.00 per ounce. All prepaid. Joe Stallsmith, Galena, Kansas.

Caucasians

Extra gentle, prolific, long tongue, little swarming, dependable workers—10% to 40% ahead of Italians. Wintered here out-of-doors and bred in a climate like their native land—severe winters—cold windy springs—thus insuring their good qualities. Foundation stock from mountainous province of Terek, Caucasus.

Carniolans

Prolific at all times, very gentle, best of winterers, build beautifully white combs, most excellent workers. My Carniolan queens headed colonies producing 435 lbs. extracted per colony over the whole yard. 28 years' experience with them. Have supplied many State Agricultural Colleges and Experiment Stations with them. My own and Jan Strgar imported strains.

Prices—Untested queens, 1 to 6, 60c each; six or more, 50c each. Tested, $1.00 each.

Both races winter better than average Italians. Both races build up more readily during the unfavorable springs of our eastern and northern states and are ready for the early flow. Both these races will improve your Italians in gentleness and honey gathering. July is a good time to do general requeening.

Albert G. Hann

GLEN GARDNER, NEW JERSEY

CONTINENTAL

THESE clean, bright, tight cans will help you sell more honey. They make a strong appeal to your customers and assure the Honey reaching them in excellent condition. Made in several styles and sizes to meet your needs. Complete information, prices, terms or samples may be secured through any of the distributors listed here, or any of our offices.

THESE DISTRIBUTORS ARE READY TO SERVE YOU:

DECATUR, IND.
The Brock Store

GRAND RAPIDS, MICH.
A. G. Woodman Co.

LOS. ANGELES, CAL.
Los. Angeles Honey Co.
Bryant & Cookinham
Diamond Match Co.

MANHATTAN, MONT.
Superior Honey Co.

HAMILTON, ILL.
Dadant & Sons

MOORHEAD, MINN.
North Dakota Bee
Supply Co.

OGDEN, UTAH
Superior Honey Co.

DENVER, COL.
Colorado Honey
Producers Assn.

LANSING, MICH.
M. H. Hunt & Son

ST. PAUL, MINN.
A. I. Root Company

SYRACUSE, N. Y.
A. I. Root Company

ALHAMBRA, CAL.
B-Z-B Honey Company

HIGGINSVILLE, MO.
The Leahy Mfg. Co.

WINONA, MINN.
Standard Lumber Co.

FARGO, N. DAK.
Magill & Co.

SIOUX CITY, IA.
Sioux Honey Assn.
G. B. Lewis Co.

WATERTOWN, WIS.
G. B. Lewis Co.

ALBANY, N. Y.
G. B. Lewis Co.

LYNCHBURG, VA.
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COUNCIL BLUFFS, IA.
The A. I. Root Company
of Iowa

CHICO, CAL.
Diamond Match Co.

PHOENIX, ARIZ.
Quick Seed & Feed Co.

CHICAGO, ILL.
A. I. Root Company

COLUMBIA, S. C.
B. B. Kirkland Seed Co.

LONG BEACH, CAL.
J. E. Delgado & Co.

WHEELING, W. VA.
G. B. Lewis Co.

SAN FRANCISCO, CAL.
E. F. Lane & Son

BRAWLEY, CAL.
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OAKLAND, CAL.
F. E. Boyden-Hansen Co.

CONTINENTAL CAN COMPANY

4622 WEST NORTH AVENUE, CHICAGO, ILL.

WHEELING JERSEY CITY LOS ANGELES ST. LOUIS CINCINNATI

Knight's

Dependable Queens

TREAT YOURSELF to THE BEST

Line-bred, Three-banded Leather-Colored Italians, Accredited and Certified by Alabama State Department of Agriculture.

They are extra large, producing large bees. All queens carefully reared and are the best that can be produced.

All queens guaranteed mated pure.

PRICE POST PAID Select (one grade), 50c, 15 per cent discount to dealers. No charge for clipping. No disease. Prompt shipments.

Jasper Knight, Hayneville, Alabama

BRIGHT ITALIAN QUEENS

Balance of season, 50c each, any number.

If you requeen with Taylor queens this fall you will be delighted when you open up next spring. Our special breeding method gives you winter protection, reduces swarming. Write for our circular and learn how we do it. Our location is free of disease.

TAYLOR APIARIES, Luverne, Ala.

HIGH GRADE ITALIAN QUEENS

Write for our free book, "About Bees," which is a treatise on Beekeeping for the beginner as well as the commercial Beekeeper.

JAY SMITH

ROUTE FIVE, VINCENNES, INDIANA

CALIFORNIA BEE TOOL CO.

810 West Pedregosa St., Santa Barbara, Calif.

Practical Useful B. B. Pliers and Hive Tool Combined. Indispensible in prying supers and frames loose to **CATCH** the first **TROUBLESOME** frame. Strong and durable, for heavy service but light to handle. Price, $1.00.

Package Bees & Queens

YORK'S QUALITY BRED ITALIANS

Our Bees and Queens are accredited and certified by us to be just as good if not superior to any you can buy regardless of price and boastful claims of seniority by many. Some may boast of having longer whiskers, but your shipments arriving other than in the best of condition does not spell satisfaction with us. The best part of our lives have been devoted to bees; our experience covers both the shipping and receiving end of the line. We spared neither time nor expense in experimenting with many different strains of bees as well as shipping methods in order to ascertain the best of each, which is passed on to you in higher quality and service without extra cost. Our efforts are bearing fruit in the way of increased demand and our express losses were less on a volume of over twelve tons of bees handled last season.

We are now shipping bees and are prepared to move out large quantities of over-weight packages of young bees on short notice. Place your order now for choice of shipping dates wanted and get your bees when wanted. Safe arrival, freedom from disease and satisfaction always guaranteed. Health Inspection Certificates with every shipment and the necessary papers with Canadian shipments for rapid clearance through custom houses. If you have never tried our bees, ask anyone who has and if we can not please you in every regard we do not want your money. Our cages are constructed light to enable you to save some on express and you will find less supersedure among our queens if properly introduced. Fast express trains from here will save many hours on your shipments.

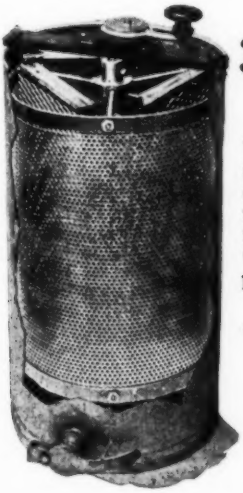
PRICES AFTER JUNE 1—Select Young Laying Italian Queens, 50c each, any number. Tested Queens, $1.00 each, any number. 2-lb. Packages Italian bees with queen, $1.95 each, any number. 3-lb. Packages Italian bees with queens, $2.55 each, any number. 15% Discount to recognized dealers only. We also offer quick service on Lewis Beeware and Dadant's Foundation at Catalog prices.

York Bee Company, Jesup, Ga., U. S. A.

(THE HOME OF QUALITY PRODUCTS.)

Built for Years of Service

Write About Your Extracting Problems



3-Fr. Extractor and Capping Dryer

This machine holds 3 frames at a time and has the same ball-bearing construction as our other Novice extractors. The supports at the side of the combs are quickly removed. The cappings can then be dumped into the big reel which is a perfect cylinder. The cappings are spread out evenly around the reel when the machine is operated, and the honey is easily thrown out of this thin layer. Pocket size, 9½x16 inches. Shipping weight, 50 pounds.

←$14.45 BUYS THIS WONDERFUL 3-FRAME MACHINE

Simplicity Extractor

The Simplicity Extractor, either size, is the best one-man extractor for the beekeeper who has a large apiary. One man can easily handle 3 loads of 45 combs each per hour, in the large size, or 4 loads of 24 combs each per hour in the small size. This means 135 combs per hour in the 45-comb size, and 96 in the 24-comb size. No extra help to hire for the beekeeper operating 50-100 colonies.

$122.50

Height of can, 33½". Diameter of can, 43". Ship. wt. 470 lbs.

24-FR. SIMPLICITY, $76.50.
Shipping wt., 300 lbs.

45-FRAME SIMPLICITY EXTRACTOR.

Also 2-fr. Extractors, $8.65 and $12.75; and 4- and 8-fr. Multiple Reversing Extractors.

Root QUALITY BEE SUPPLIES

The A. I. Root Company
Medina, Ohio

Root QUALITY BEE SUPPLIES

BUY YOUR THREE-BANDED ITALIAN QUEENS FROM

SHASTA APIARIES

SHASTA, Shasta Co., CALIF.

QUEENS

Finest Italian Stock

Real QUEENS of QUALITY

50c Each Postpaid.

J. F. McVay, Jackson, Alabama

CARNIOLAN & AUSTRIAN QUEENS

Our queens are hardy, gentle, prolific, great honey-gatherers, builders of very white combs. Use mostly wax in place of propolis. No foul-brood here. No package bees.

Untested Queens, June 1 to Nov. 1, 50c.

A. M. MIDDLETON, FORT EDWARD, N. Y.

For Sale

PURE ITALIAN QUEENS

Nothing but the best. Bright yellow and three-bands. Also red clover, 50c each. You send for them, they go.

Graydon Bros., Rt. 2, Greenville, Ala.

QUEENS

50c EACH, GUARANTEED.
NO DISCOUNTS.

THE CROWVILLE APAIRIES

WINNSBORO, ROUTE 1, LOUISIANA.

WE DO HIGH CLASS JOB PRINTING.
SEND US YOUR ORDER
THE A. I. ROOT COMPANY, MEDINA, OHIO

New Low Prices

Prices are lower on queens than they have been since the depression. Prices were reduced on June 1 to 50c each. Packages also reduced. We are now prepared to make immediate shipment on all orders. Certified and Accredited by the State Department of Agriculture.

J. M. Cutts & Sons

R. F. D. 1. MONTGOMERY, ALA.

GOLDEN ITALIAN QUEENS

The rest of the season, 50c each, any number. The same high quality breed, noted for their gentleness and honey gathering. Been in business for over 30 years.

E. A. SIMMONS APIARIES

Powell Owen, Mgr. GREENVILLE, ALA.

PALMETTO QUALITY QUEENS

Our three-banded Italians reared to give service. They are sold with a guarantee that they must please. 15% discount to certified dealers. Will be pleased to hear from those buying queens for re-sale. Guaranteed safe delivery and no disease.

C. G. ELLISON, BELTON, SOUTH CAROLINA

Dependable Italian Queens

INSTANT SERVICE

Select Untested Queens.....50c

15% discount to dealers

CALIFORNIA APIARIES

J. E. Wing. Cottonwood, California.

"Better Bred Italian Queens"

QUALITY AS GOOD AS CAN BE PRODUCED.
QUANTITY—A LARGE OUTPUT.
SERVICE—ORDERS FILLED SAME DAY AS RECEIVED.

——ANY QUANTITY—50c EACH.

DEALERS, 42½c EACH. DEALERS WANTED IN EVERY LOCALITY. LARGE QUANTITY OF FOUNDATION AT A GOOD PRICE OR EXCHANGE FOR WAX. ALSO BEE SUPPLIES FOR SALE. WRITE FOR PRICES.

CALVERT APIARIES CALVERT, ALABAMA

50 CENTS EACH FOR QUEENS
THAT PAY THEIR WAY
PURE THREE-BANDED ITALIANS
THAT PLEASE THE CUSTOMER
D. W. HOWELL, Shellman, Georgia

A Good Rule to Go By
Buy your bees and queens from
ALABAMA APIARIES
MT. PLEASANT, ALA.
Queens, 50c.
Packages, $1.95 and $2.55.

Caucasian Bees
—FOR JULY—
We have been breeding and selecting Caucasian bees for more than ten years. Our foundation stock was imported direct from the home of Caucasian bees. We have hundreds of letters from beekeepers praising the quality of our bees. This is evidence they are pleasing.
Untested queens, each, 50c. Select tested each, $2.00; good breeders, each, $5.00. We guarantee safe arrival and satisfaction.
Bolling Bee Company
Bolling, Alabama

QUEENS
LIGHT THREE-BAND ITALIANS.
Reared on a good steady honey flow, and mated in a three-frame nuclei. Pure mating and satisfaction guaranteed.
50c each. 15% discount to dealers.
W. O. Gibbs Co.
Box 81. BROOKFIELD, GA.
Where service is a fact, not a promise.

Moore's Strain
Leather Colored Italian Queens
Superior Stock
50c Each
World-wide reputation for honey-gathering, hardiness, gentleness, etc., since 1879. Safe arrival and satisfaction guaranteed. Circular free.
J. P. Moore
MORGAN KENTUCKY

ITALIAN QUEENS
CARNIOLAN QUEENS
CAUCASIAN QUEENS
Reared in separate apiaries several miles apart.
Price, 50 CENTS each.
RONALD KIRK
Rockton, Pennsylvania

REQUEEN WITH HOLLOPETER'S QUEENS
Queens from this well known strain of northern-bred three-banded, Italian stock, have been approved by many of the beekeepers of the United States, Canada, and of foreign lands. Thirty-four years beekeeping experience, twenty-five years commercial queen breeding, is back of the rearing and sale of each queen. Words will not add to their good qualities, and each queen can speak for herself. We guarantee the safe arrival of disease free, hardy, prolific, hard working stock.
Prices in U. S. and Canada—Untested queens: One, 60c; two or more, 50c each. Tested queens. $1.00 each. Untested queens to foreign lands, $1.00 each. Usually arrive safely, but safe arrival not guaranteed.
ADDRESS
White Pine Bee Farms, Rockton, Pa.

WORLD WAR VET. **Morrison's Northern Italian Queens** MEMBER V. F. W.
Comrades: You can not produce a honey crop with weak colonies headed by old worn-out queens. Requeen with my stock. I specialize in rearing thrifty prolific queens, with 10 years of selective breeding back of them. If you are not satisfied I do not want your money.
—PRICE, 55c EACH, ANY NUMBER—
WEST BRANCH APIARIES, GROVER HILL, OHIO

Italians Caucasians

QUEENS

1, 90c; 10 or more, 80c each, postpaid.

Large orders several weeks in advance, deduct 10%. Safe delivery with satisfaction.

A part of every sale will be paid to the American Honey Institute.

HONEYBEE APIARIES
E. W. Peterson, Mgr.
SANDWICH, ILL.

Beekeepers Say:

Thagard's Dark MASTER BRED Imported Italians Are Different and Better.

"Those dark Italian queens I received from you several years ago carried twenty frame brood nest, worked earlier and later in the day, were gentler, and produced twice as much honey as any other strain in my outfit. They were heads above the lighter strains."—L. A. Hargreaves, Knoxville, Tenn.

"While breeding queens in Alabama I purchased some of your dark imported stock Italians. They were by far the best all around strain of bees I ever worked."—Curd Walker, Cleveland, Tenn.

We are receiving hundreds of letters from our customers similar with repeat orders. **IF THEY WERE NO BETTER, MASTER BRED BEES** wouldn't have made good for eighteen years.

Accredited and certified by the Alabama Department of Agriculture.

QUEENS, ONLY 50c EACH

Package bees at June Code prices.

THE V. R. THAGARD CO.
GREENVILLE, ALABAMA

QUEENS

BREEDING STOCK
FROM
NORTHERN ITALY

All our northern bred queens are reared from new imported stock, from one of the most reliable queen breeders in Northern Italy, up in the Alps. The queens are noted for hardiness, gentleness, etc. They are certainly layers. The bees are three-banded and decidedly dark-leather colored. Any beekeeper interested in honey production will make no mistake in ordering these queens.

PRICES FOR U. S. A. AND CANADA, POSTPAID
(Can not be sent C. O. D.)

LAYING ITALIAN QUEENS

1 to 4, 75c each; 5 to 24, 70c each; 25 or more, 60c each.
Outside United States and Canada, add 25c per queen.

The A. I. Root Co., Medina, Ohio

Try Our *SMOKER FUEL* for All Around Satisfaction
most effective in quieting the bees—stays lighted a long time without attention.
——A REAL TIME SAVER——
H. A. Seabright, 1492 Belmont Ave., Columbus, Ohio: Enclosed find $1.00, for which send me, express collect, one carton of smoker fuel, containing about 300 pieces, 6 inches long.
Name..... Address.....

"She-Suits-Me" Queens

Do you like bees easy to handle and yet are hustlers for honey?

Do you like bees beautiful to look at and yet will bring home the bacon?

THEN GIVE LATHAM'S QUEENS A TRIAL.

Prices for untested queens:

One queen $0.80
Six queens 4.50

When fifty or more queens are ordered in advance by three weeks or more, the price will be 50c per queen.

Allen Latham, Norwichtown, Conn.

Line-bred 3-banded Italians.

Every Queen a Gem

(Not just ordinary queens)

We can get them to you in double quick time.

Any number, 50c each.
To dealers, 43c each.

CITRONELLE BEE CO., Inc.
CITRONELLE, ALA.

BET YOU 50c

For One of Our
GOLDEN ITALIAN QUEENS, Postpaid by return mail, is a real bargain when you consider that they take on all comers, regardless of breed.

Also **PACKAGE BEES** at minimum marketing agreement prices.

SPOERRI APIARIES
ST. BERNARD P.O., LOUISIANA

SEND US YOUR LABEL ORDERS NOW.
THE A. I. ROOT CO., MEDINA, OHIO.

We also manufacture a complete line of shipping cases for comb and extracted honey.

CORRUGATED

Shipping Containers

For One 5-gallon 60-lb. can of Extracted Honey

Weight only 2 lbs. per carton.
Come knocked down.
Tied in bundles.

POSITIVELY MEET ALL SHIPPING REQUIREMENTS

Up to 250.....$9.50 per C
500 to 1000..... 8.50 per C
1000 to 2000..... 7.75 per C
2000 to 5000..... 7.50 per C
F. O. B. Columbus. Check with order.

Beekeepers' Associations and pool buyers, write for details of our special offer.

——SAVE MONEY—— **——BUY DIRECT——**

THE CORRUGATED CONTAINER CO., Columbus, Ohio

How'd You Like to Have Your Wife Win a Prize?

If she uses honey in her fruit cakes, cookies and candy, she has a **splendid** chance to win twenty-five dollars in cash and almost that amount in other prizes. In all, **ONE HUNDRED and TWENTY-FIVE DOLLARS** in cash prizes and twenty-five other prizes are to be given away to the winners of **AMERICAN HONEY INSTITUTE'S**

Second National Honey Cookery Contest

Every person entering the contest will receive a copy of the Institute's latest and best recipe release, "One Hundred Honey Helpings." This book contains the recipes that won prizes in the First National Honey Cookery Contest as well as one hundred of the honey recipes judged most popular during the Institute's existence.

For full details, use the coupon below:

American Honey Institute

Madison ***Wisconsin***

I am planning to interest my wife in entering the Cookery Contest. Please send all details to

Name .....

Address .....

McDonald Quality Queens

Bred from hardy northern breeders. Big, prolific, three-banded Italian Queens that are hustlers. Bees are gentle—the kind of bee that you like to handle. Every queen that is sent out is a selected queen. Write for prices.

L. H. McDONALD
RT. 1, BOX 1213, CERES, CALIFORNIA
(28 years' experience with Bees. Resistant to European F. B.)

Norman Bros.' Queens

—BY RETURN MAIL—

Take no chance. Buy the best queens for bigger profits. Our many years of careful selecting and breeding of the highest quality possible, such as honey production, beauty, gentleness, size, and color, means a saving to you when you order NORMAN BROS.' large, yellow selected queens. We guarantee satisfaction in U. S. A. and Canada.

—PRICES—

Untested queens, any number.....50c each
Tested queens, double the price of unt. queens.
2-lb. pkg. with queen, any number.. 1.95 each
3-lb. pkg. with queen, any number.. 2.55 each

Norman Bros. Apiaries, Ramer, Ala.

For Results Buy
Thrifty Bees

We can make 24-hour delivery on your orders for queens. Our good service and THRIFTY three-banded Italian queens are guaranteed to please.

We have the equipment to supply your needs, large or small, and our 43 years' experience insures you of the finest stock and careful attention to every detail.

We guarantee pure mating, safe arrival and perfect satisfaction.

Select untested queens, 50c each, any number. 15% discount on queens for re-sale.

W. J. Forehand & Sons
FORT DEPOSIT, ALABAMA
Breeders since 1892.

→ Morrison's Northern ←

Three-banded or Leather-Colored Italians. Our foundation stock comes direct

→ From Northern Italy ←

—QUEENS—

1 to 25.....60c	25 to 50.....55c
50 or over.....50c	Tested.....$1.00

The Cloverdale Apiaries, Cloverdale, Ohio

Queens, Fine Bright Italians

Garon's Quality Diamond Queens. We can furnish FINE RELIABLE queens by return mail. We are constantly improving our queen rearing methods. Our many years' service stand behind our products.

Fast builder.....Prolific producer.

Queens, 50c each. 2 lbs. with queen, $1.95. 3-lbs. with queen, $2.55.
Prompt delivery. Satisfaction guaranteed.

GARON BEE COMPANY, DONALDSONVILLE, LOUISIANA

XUM

ARE YOU GAMBLING WITH YOUR BEES?

AFTER ALL

"In fact, I like Three-ply so well that I do not use any other, and I have used many kinds. If for no other reason, simplicity and economy should sell it." R. C. N., Ohio.

Shopping Around Is Expensive

At least that is the comment of hundreds of beekeepers on their experience with foundation. For over sixty years we have studied the needs of the bees. We have made all kinds of foundation; we have reinforced it in every way conceivable. Just as shopping is expensive, so is testing. But we have carried on these experiments so as to give the beekeeper the best. When you buy Three-ply Airco Foundation you buy the best, because the bees will show you that it is the best foundation on the market today. **When a better foundation is made, Roots will make it.**

You Can Not Afford to Gamble

BUY THREE-PLY

The A. I. Root Company
Medina, Ohio

Root QUALITY BEE SUPPLIES

TALKS TO BEGINNERS

(Continued from page 432.)

ada where annual requeening is practiced it seems advisable to requeen during July. The advantages of this practice are that young queens have more time to produce populous colonies for winter than have queens introduced later in the season. Furthermore, colonies that do not accept queens first given will still have time to accept queens before the season is too far advanced.

TO LATE FOR CLASSIFICATION

MICHIGAN finest clover honey; case, $8.00. Sample, 10c. Abel Totems, Owosso, Mich.

TUPELO HONEY—New 60-lb. cans, 8c per lb. Anthony Bros. Honey Co., Apalachicola, Fla.

FOR SALE—A No. 4425 Root 4-frame power extractor; has been used only six years; is in good mechanical condition. Write Rusell D. Smalley, Rippey, Iowa.

ATTENTION

We Are Stevenson's Golden Italians, Real Queens of Quality

Our bees are large, the best of honey producers, and so gentle that it is a pleasure to own them. We are overcoming prejudices and winning favor wherever introduced.

Queens, untested, 50c; tested, $1.50.
Write for circular.

STEVENSON'S APIARIES, Westwego, La.

Caucasian Queens 50c Each

PACKAGE BEES, LOWEST PRICE PROMPT SHIPMENT

OUR QUEENS are reared from the finest honey producing strains. No effort is spared to produce them that will head large vigorous swarms. Just the kind you want to produce a crop of honey. No beekeeper wants bees that produce no surplus. This strain of queens will increase your summer and fall crop, also insure good wintering and be ready for the 1936 crop.

PACKAGE BEES. During June and July we will have mixed bees from which to make up any kind of a package wanted. With these fine queens included they will prove an excellent buy. 2-lb. package with queen, $1.95. 3-lb. pkg. with queen, $2.55. F. O. B. express. Parcel Post, postage extra. We can make up any size package you want, nucleus or combless.

CAN SUPPLY OUR OLD LINE OF ITALIANS ALSO. QUEENS OR PACKAGE BEES, SAME PRICE.

Send us your order. You will profit from our **QUALITY. BE PLEASED** with our service and save money on the prices.

HARRISON APIARIES

HONORAVILLE, ALABAMA

Queens, 50c, by Return Mail

AS GOOD AS CAN BE BOUGHT. Requeen your colonies NOW with JOHN A. NORMAN'S bright 3-banded Italians. You will be more than pleased with MY large yellow selected honey-gathering strain. They will build up and increase your honey profits. Every queen guaranteed purely mated, safe arrival and SATISFACTION.

Prices: June 1 to Oct. 31—Untested queens, 50c; tested, $1.00; 1 2-lb. pkg., $1.95. All packages F. O. B. Express. State health certificate furnished with each order.

JOHN A. NORMAN, Box 92 RAMER, ALABAMA

ANNOUNCEMENT

We have bought Shaw & Ramsay Apiaries and the good will of their customers. Shaw & Ramsay are known to be the oldest commercial package bee shippers of Louisiana. We solicit the continued favors of their many customers.

RED STICK APIARIES & CO. offer cypress beehive equipment. Why pay for fast rotting pine when a superior equipment, manufactured from the "wood eternal" can be had for the same price?

Ask for our bid on your beekeeping equipment for your future requirements.

RED STICK APIARIES & CO., MONTEGUT, LA.

IF YOU ARE A GOOD BEEKEEPER

Your first thoughts when working your bees should be the queens as it is very important to have only good young queens in your colonies.

——PACKAGE BEES——

We have plenty bees and can make prompt shipments.

Package Prices With Queens

2-lb packages.....$1.95 3-lb. packages.....$2.55

Select Untested Queens.....50c.

15% discount to dealers.

On all orders for ten or more queens we will give 5% to the **American Honey Institute,** and the customers will get credit for the support.

Merrill's Quality Bees and Queens

Must give 100% satisfaction.

Merrill Bee Company, Bucatunna, Mississippi

Mississippi's Oldest Shippers

Queens

ITALIANS - CAUCASIANS

Reared right and shipped so they will reach you in good condition. Give us a trial and see.

50c each, any number

Package Bees

2-lb. pkgs. with queen..$1.95
3-lb. pkgs. with queen.. 2.55
2-lb. nuclei 1.95
Liberal weight.

WEAVER APIARIES

NAVASOTA, TEXAS

Agents for Pinard Nailless Queen Cages.

LADY-LIKE CAUCASIANS

OUR MATING GUARANTEE IS YOUR PROTECTION

Every queen is guaranteed to be mated to a pure Caucasian drone. You are the judge. We replace any queen not positively pure Caucasian and purely mated.

SEND FOR FREE CAUCASIAN CIRCULAR

Queens: 50c remainder of season.

Breeders, $5.00 each. Export queens, $1.00 each. Delivery guaranteed only in U. S. and Canada.

CAUCASIAN APIARIES

BROOKLYN, ALA.

JENSEN'S "MAGNOLIA STATE" STRAIN BEES and QUEENS

Pure Three-Banded Italians

Package bees still available with **RIGHT-NOW SERVICE.** Booster Packages (queenless), extra weight in baby bees that will quickly become fielders for you. The addition of a half or whole package to colonies that for some reason have not built up with the rest will whip them into producers. You'll be amazed at the new life these colonies take on.

QUEENS—When it comes to Quality Queens we take no back seat for **MR. ANYBODY.** If 21 years' large scale production are not sufficient to gain a knowledge of the art of queen rearing, then our case would be hopeless. From the many fine things our customers write us about our queens, and the very few "kicks," we get much joy and satisfaction, knowing we are accomplishing the things we are striving to do.

PRICES FOM JUNE 1st THROUGH BALANCE OF SEASON:

2-lb. pkgs. with sel. untested queens, ea., $1.95 3-lb. pkgs. with sel. untested queens, ea., $2.55
2-lb. Booster Packages (queenless), each, $1.45 3-lb. Booster Packages (queenless), each, $2.05
Additional pound of bees..... ....$0.60
Express collect.

QUEENS—SELECTED UNTESTED, POSTPAID, EACH..... ....$0.50
All queens guaranteed purely mated. Health certificate with every shipment.

JENSEN'S APIARIES, MACON, MISS., U. S. A.

Three-banded Italian Queens

50c EACH

Highest Quality, Prompt Service.
Write for descriptive circular.

J. F. DIEMER CO., LIBERTY, MO.

Mott's Northern-bred Italians

Non-swarmers. Eliminates that swarm nuisance. Purely mated, or will exchange.
June, July—$1.00; 2 or more, 75c each; 50, $35.00; 100, $65.00.
Fair to good breeders, $2, $3, $5. Virgins, 40c.
Satisfaction guaranteed. See list.

E. E. MOTT & SON, Glenwood, Mich, U. S. A.

Fine Italian Queens

ANY NUMBER—QUICK DELIVERY—FRESH TO YOU

PLENTY PACKAGE BEES

Prompt delivery, rush orders—Fine young worker bees—Light, well ventilated cages—Satisfaction guaranteed.

Untested queens, each.....50c

2-lb. pkg. with queen, ea., $1.95 2-lb. pkg. without queen, ea., $1.45
3-lb. pkg. with queen, ea., 2.55 3-lb. pkg. without queen, ea., 2.05

For each additional pound bees, add 60c. For parcel post shipments, add 10c per pkg., plus postage. 15% discount to dealers. No disease known here.

HOLDER APIARIES, Citronelle, Ala.

Package Colonies, Ohio, Summer, 1934.

• • •

We offer the same good quality for 1935.
YOUNG, PURE, THREE-BANDED ITALIAN BEES
Select young laying queens. Gentle, vigorous, honey-producing stock.
PRICES JUNE 1 TO OCT. 31:
2-lb. pkgs. with queens.....$1.95 each
3-lb. pkgs. with queens..... 2.55 each
Select 1935 laying queens..... .50 each
Accredited and certified by the Alabama Dept. of Agriculture, and guaranteed to please you.

H. C. SHORT
FITZPATRICK, ALA.

"YES"

QUEENS VIA RETURN MAIL. DO DELAYS. I SHIP WHEN YOU WANT THEM.

•

PRICE LIST
SELECT UNTESTED QUEENS, 50c EACH. SELECT TESTED, $1.00 EACH.

•

ACCREDITED AND CERTIFIED BY ALABAMA STATE DEPT. OF AGRICULTURE.

•

ALL QUEENS GUARANTEED PURELY MATED

•

W. E. HARRELL
Formerly Hayneville Apiary Co.
HAYNEVILLE ALABAMA

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